



ExpoTees 2017

Showcasing the next generation of digital expertise

School of Computing

Teesside University

Welcome

to ExpoTees 2017

I am delighted that ExpoTees 2017 is our 12th annual exhibition of students' work from Teesside University's School of Computing. Once again we are proud to showcase some truly excellent work with a wide selection of projects from our students. Project topic areas this year include computer science, information systems, programming, computer games art and design, visual effects and computer animation. ExpoTees is scheduled to run over two days, with our computer science and information systems subjects on day one, and games, animation and visual effects on day two. I am sure that you will agree that this brochure is evidence of the outstanding world-leading work that our students produce – an exemplar to universities worldwide.

It is a great credit to our students, and the staff who have taught, enthused and supported them during their studies, that our graduates enter employment with many world-leading organisations.

I hope that you enjoy your time at our exhibition. Do use it as an opportunity to meet our students, and find out more about their wonderful achievements.

Simon Stobart

Dr Simon Stobart
Dean, School of Computing

Friends of ExpoTees

It is always a pleasure to see so many familiar faces returning to ExpoTees year on year and to welcome new visitors. We are very proud of our growing community of supporters, and we'd like you to join our LinkedIn ExpoTees group where you can meet academics, exhibitors past and present, and all the supporters who have worked to make ExpoTees such a success over the past decade. We are delighted to welcome our event partners Amplience and FlashTalking.

Amplience

flashtalking

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What is ExpoTees 2017?

ExpoTees is our 12th annual exhibition of outstanding computing innovation, technology and design – and an opportunity to recruit bright, new talent to your organisation.

On display is a selection of some of the finest examples of work produced by our final-year students, representing the full spectrum of subjects taught within the School of Computing – animation and visual effects, games design and programming, web and computer science.

Our students undertake an in-depth exploration of a chosen subject area and demonstrate their ability to research, analyse, synthesise and creatively apply what they have studied. The project is often in an area they have gained an interest in either through a work placement or through their studies. Some student projects have external clients and require project managing to industry standard. These innovative, research, design and development projects make up an exciting and diverse showcase.

We are proud to say that our graduates achieve great success in industry – and sometimes even fame. This is a superb opportunity to meet our rising stars of 2017 before they embark on their careers.

Day one

Computing & Web

Students will be demonstrating technically and academically demanding work, ranging from real-time visualisation of complex systems to innovative web-applications; advanced networking solutions to novel applications of artificial intelligence and robotics. Games programming students are also exhibiting as their particular skillset is also highly desirable outside of the games studios.

Day two

Animation & Visual Effects, and Games

Students will be demonstrating highly creative and technically challenging projects in the areas of 2D, 3D games, games programming, animation and visual effects, real and fantastical character modelling and texturing, innovative game designs, complex and highly detailed game environments

Another RTS award win for Teesside University filmmakers

The student winners of the 2017 Royal Television Society North East and Border Centre awards now go towards the RTS National Student Awards on in June.

Student animation *A Monster Named Malcolm* was created by graduates of the School of Computing's BA (Hons) Computer Animation and BA (Hons) Computer Animation and Visual Effects – Ruthie Nielsen, currently working at TT Games, Vicky Wainwright, an MA Concept Art student, Rose Gibbin, Zoe Llewellyn and Jessica Sham, who are now working as graduate interns in the School of Computing's Digital Studio.

Narrated in the style of a children's poem, the 3D animated short follows the adventures of Malcolm whose beloved teddy bear is stolen by a mischievous bird and held hostage at the top of a tree.

The film was produced as part of the students' Animation Short Film Production module.

Ruthie Nielsen, Vicky Wainwright and Zoe Llewellyn travelled to Newcastle to accept the award in-person.

In her acceptance speech Ruthie said, 'It's pretty amazing, and I want to thank all of the lecturers who helped us with this.'

The previous year, Ruthie had accepted the award on behalf of another Teesside graduate, Domareen Fox, and was delighted to be accepting the award again for a project her team had worked on.

Rose Gibbin, who was unable to attend the ceremony, said, 'I'm incredibly grateful to the academics that supported us throughout this project.'

Selina's lifetime trip to San Francisco

Selina Peart-Pearson says she has Teesside University to thank for the opportunity to embark on the trip of a lifetime.

Final year BA (Hons) Computer Games Art student Selina was among a handful of lucky students to win an all-expenses paid trip to the world's largest professional game industry event GDC (Game Developers Conference) in San Francisco.

Now back at lectures at Teesside University, Selina, who flew to America on her 26th birthday, said, 'It was an amazing experience and it is such a huge event.'

Selina was one of just ten students from across Europe to win the GDC scholarship for women in games, offering an all access event pass.

The five-day GDC conference brought together around 27,000 programmers, artists, game designers and other professionals involved in creating interactive games and virtual reality to exchange ideas and shape the industry's future.

She added, 'It was great to meet the other nine students who had also won scholarships and we had lots of opportunities to meet people from different games companies. The conference organisers arranged for industry speakers to talk to us at the hotel every morning during breakfast, which was a great start to each day.

'My specialism is technical art, which is quite a niche area and I was really excited when I was able to sign up to a workshop on it at GDC.'

Her work in technical art also led to Selina being invited to lunch while in San Francisco by Greg Foertsch, an art director with Firaxis Games.

She said, 'I'd posted work from my final year project to my blog and Greg contacted me on Twitter, suggesting we meet up. I was overwhelmed when he presented me with a signed concept art book as a gift.

'It was great spending time with the other scholarship winners as we all had the same mindset and will be keeping in touch. Two others were concept artists, another was design and another was a programmer and we all got so much out of it.'

Selina, who is originally from Huddersfield, added, 'I wanted to study at Teesside University as I was told it was the best place for computing. The course has been great and has put me on the right path to work towards a career in the computer games industry.

'I'm not sure I would have even applied for the GDC conference scholarship without studying at Teesside University. This has given me just what I needed for my final year.'

Gabrielle Kent, Senior Lecturer in Games Development in the School of Computing, who shared details of the scholarship with her students, said, 'Selina submitted a great application to win the trip to San Francisco.

'GDC is perhaps the biggest and most prestigious event in the global games calendar. Selina will be hearing from some of the biggest names in games development and making contacts from the world's top studios.

'She's a very passionate student and I hope this trip helps her to find her perfect job in the industry.'

North-East's digital showcase

Hundreds of digital professionals mingled with talented computing students at Teesside University's annual ExpoTalent event in March.

This year, ExpoTalent teamed up with DigitalCity and, alongside the showcase of work from the School of Computing's second year students, the region's best digital businesses exhibited in the Campus Heart under a specially erected marquee.

Bringing together ExpoTalent and Get Digital gave businesses the ability to network and seek out collaborative opportunities while also talent spotting and targeting students for work placements and internships.

Over 400 young people from across the region who are considering applying to university to study computing and digital courses also attended the event to take inspiration from the work of the School of Computing's students.

Siobhan Fenton, associate dean (enterprise and business engagement) said, 'ExpoTalent has a fantastic track record of helping businesses recruit the talent that they need. There's a natural synergy between ExpoTalent and Get Digital and bringing together the two events provided even more opportunities for businesses to learn about the multiple opportunities for collaboration with the University.'

Employers were impressed with the array of skills presented by Teesside students and already 26 businesses, including Hammerhead VR, Double Eleven, Viral Effect, Coatsink and Better Brand, offered graduates employment opportunities and internships, as a result of visiting ExpoTalent..

Siobhan added, 'At Teesside University we pride ourselves on our ability to equip our graduates with the skills they require to meet the needs of employers.

'With the pace of technology moving so fast, ExpoTalent plays a vital role, not just in showcasing the work of our students, but it also gives us an opportunity to speak with businesses and find out the sort of skills and capabilities that they are looking for in graduate. Businesses also had the opportunity to seek out new business prospects and also learn about the latest trends and innovations in the digital world.

'We are delighted that so many companies were so impressed with our second year students' work that they could offer them jobs or placements.'

DigitalCity is an initiative based at Teesside University, which works with North-East companies to advise on digital solutions, stimulate digital innovations and secure investment into digital products.

University expertise helps Army community group

Teesside University has worked with an organisation which helps the families of serving soldiers to modernise its systems and processes.

Catterick Garrison Community Group is based within the Army Welfare Service at Catterick Garrison in North Yorkshire and provides a programme of activities and social events for the families of service personnel and their dependants.There are more than 13,000 personnel, military, civilian and their dependants, living and working in the area.

The group approached Teesside University's School of Computing to ask for advice on how it could digitise its booking and registration system. It uses a paper-based booking system meaning anyone wanting to take part in an event must fill out a lengthy booking form and then deliver it to the group's offices during working hours.

Neil Brimer, a Community Support Development Worker at Catterick Garrison, wanted a system where people could register for activities online and then book on to different events without having to fill out multiple forms at various points across the year. However, because of security considerations, a bespoke system needed to be designed to meet exacting specifications of the Ministry of Defence.

Initially students from the School of Computing worked with the group to look at the problems and then devise potential solutions. Senior lecturers Barry Hebbron and Myriam Mallet then worked on a consultancy basis to design a web–based application which would meet all the requirements of the group.

They have now devised a proof of concept system which has been submitted to the Ministry of Defence for approval. If approved, the system could be rolled out to similar organisations across British Army sites around the world.

Barry Hebbron said: 'This was a very demanding brief, because this is a system which will be used exclusively by the families of serving military personnel it would naturally contain a great deal of sensitive information and security was paramount.

Left to right: Neil Brimer, Colonel Andrew Hadfield and Dr Geoff Archer

'Building a run-of-the-mill booking system was not an option. We had to design a bespoke system which would conform exactly to the specifications laid out.'

Neil Brimer added, 'The University has a reputation as having some of the country's leading technology experts, and what they developed is totally unique and bespoke. We now have a prototype which we can submit for approval

'Teesside University was excellent to work with This project would never have got started without the support of the staff at Teesside University. We needed a flexible partner who would be able to adapt to the challenge and work to our framework and timescale.

'We can now think seriously about how to digitise our processes.'

To celebrate the success of the project, Deputy Brigade Commander Colonel Andrew Hadfield presented a commemorative plaque, which was received on behalf of the University by Head of Knowledge Exchange Dr Geoff Archer.

Gabrielle offers expertise for BBC's latest Live Lesson

A School of Computing computer games expert took part in a live BBC, *Doctor Who*-themed, lesson designed to teach students about the importance of computer programming. Doctor Who and the micro:bit is part of the BBC's Live Lessons and was broadcast online in March.

Gabrielle Kent, a Senior Lecturer in Computer Games Development featured as an industry expert talking about programming and how it is used in computer games. She also took part in a demonstration with four young people showing how the 'repelling the shockwave' program on their micro-bit works – using components they have learnt about such as inputs, variables and conditional statements.

The live lesson was aimed at 11 to 13-year-olds and has been produced by BBC Learning in collaboration with the team behind *Doctor Who*. Using the BBC micro:bit students were challenged to solve a fictional disaster scenario while coming face to face with one of the Doctor's deadliest foes. The lesson was designed to develop their computational thinking, exploring search algorithms, different types of errors and the components that go into an algorithm.

Gabrielle has worked in or around the games industry for over 20 years and has been listed as one of the top 100 most influential women in the games industry. She also heads up the University's annual Animex festival, which attracts hundreds of people from across the globe and has been named as one of the best events in the world by the influential *Animation Magazine*.

Gabrielle said, 'Programming is very much a core part of computer games development. Although you don't need to program to be a games artist, it's very useful for game designers to have an understanding of scripting so that they can implement aspects of their game designs. I really enjoyed discussing the importance of programming in game development in the Live Lesson.'

TeleWare announces a new Knowledge Transfer Partnership

Communications technology business TeleWare is collaborating with Teesside University to share knowledge and drive innovation through a Knowledge Transfer Partnership (KTP).

Through the KTP, TeleWare will work closely with Teesside's leading academics to create cutting-edge solutions that answer real business needs.

The partnership will focus on Big Data, machine learning and customer analytics – key areas for both organisations in 2017.

TeleWare is looking more and more at how customers interact with businesses, be it through traditional call centres, social media, web chats or other channels.

The KTP examines the best way to collect data from customer interactions and analyse it to enhance customers' experiences. Machine learning is a large part of TeleWare's CX Analytics as the technology can learn best practices and then deliver those insights back into businesses.

KTPs are part funded by Innovate UK. Dr Teng Fu, an Artificial Intelligence specialist, will be based with TeleWare full time, ensuring that TeleWare has permanent access to a highly-skilled member of staff with excellent knowledge of the subject and industry.

This will assist product teams to design solutions with the full advantage of Teesside University's research capabilities, as well as a broader understanding of the environment in which they will be deployed.

Throughout the two-year partnership, TeleWare will gain access to research expertise from Dr Yifeng Zeng and Dr Claudio Angione from the School of Computing.

Dr Geoff Archer, Head of Knowledge Exchange at Teesside University said, 'To maintain a technological advantage, businesses today must gain insight from a range of different sources including the latest academic thinking and theories.

'This will allow them to more fully understand the needs of their customers and their industry. Through working with TeleWare, we are able to give them the benefit of our knowledge to guide them in their development process. It's exciting for us to then see a practical application of our thinking.'

Paul Millar, Chief Innovation Officer at TeleWare said, 'We've always had a great relationship with Teesside University, in fact, our own CEO Steve Haworth is a Teesside graduate.

'The KTP is proving to be very fruitful for us as we continue our journey into CX Analytics and enhancing the communication between businesses and their customers. Having this academic support to constantly improve our knowledge is paying real dividends in terms of how we develop our solutions.'

Dr Claudio Angione and Dr Yifeng Zeng

Rachel joins animation graduates on award-winning performance

American film animator Rachel Rubenstein went from Teesside University to working on Oscar-winning movie *Zootopia*.

Rachel, an MA Digital Character Animation graduate, also recently worked on Oscar nominated film *Moana*. Originally from Nashville, in Tennessee, Rachel studied graphic design back home at Louisiana State University, before travelling to Teesside to complete the MA.

Rachel, 28, now living in California, said, 'Just before the final year of my undergraduate studies I found a stop motion animation class and fell in love with animation. My wonderful teacher, Dr Stacey Simmons, was also the creator of the Red Stick Animation Festival in Baton Rouge, a sister festival to Teesside University's Animex.

'Dr Simmons referred me to Teesside's postgraduate programme in animation, despite me never having previously left the United States. From knowing very little about Teesside and having never travelled before, Teesside took a chance on me and I came over to study for a year, graduating in September 2012.'

A few months after graduating, Rachel moved to Burbank, California, to work on several Marvel films before starting as an apprentice at Walt Disney Animation Studios.

She said, 'That was my start at Disney and I worked on Zootopia. I learned so much during that time and after my contract ended I was brought back for *Moana*. My time at Teesside prepared me for a career in the animation industry by showing me the importance of taking advice from my peers and how to handle the workload expected in the industry.

'I loved my time at Teesside. Many of the relationships I developed there have become lifelong ones. My favourite thing about my time was, and remains to be, the people.'

Rachel is among a number of Teesside University graduates who have worked on recent films nominated this year for an Oscar or BAFTA. They include:

- Becky Pownell, Gabriela Mursch, Natalie Rocks, James Burr and Ama Gomes, who all worked on *Fantastic Beasts and Where to Find Them*
- Greg Fischer, Michael Thinges and Annie Mitchell worked on *The Jungle Book*
- Dan Copping, Thomas Dohlen and Natalie Rocks all contributed to *Doctor Strange*
- Walter Gilbert worked on *Star Wars Rogue One*
- Daniel Chirwa worked on *Deepwater Horizon*.

Dr Simon Stobart, Dean of the School of Computing, said, 'It is tremendous that so many of our graduates go on to such great things as it shows the calibre of our students and teaching. Our staff and students work very hard to ensure that the quality of the work they accomplish is of the highest international standards.'

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"Given opportunities to learn new scripting languages like PHP..."

Graduate Profile

James - Feeds Specialist

Whilst at University, I gained valuable skills in coding languages to build and test websites. After graduating, I started working at Flashtalking in a studio role. I utilized and progressed with the skills I had learned at university but also given the opportunity to learn from others with more experience. I gained valuable knowledge in online advertising and in an environment that's constantly changing, it keeps it interesting. Given opportunities to learn new scripting languages like PHP, helped me to progress into a new role as a feeds specialist. Within this role, I now work more in the back-end to help clients create personalized and tailored ads to fit each individual user.

ExpoTees London rounds off 50 year School of Computing anniversary

The annual ExpoTees London trip took place at the multi-award winning animation of visual effects studio The Moving Picture Company in June 2016.

This central London location once again proved to be a great opportunity for Teesside University students to network with recruiters and studio managers representing the cream of the UK animation and visual effects industry.

The trip, organised by Justin Greetham, senior lecturer in visualisation and graphical applications, began with a special showcase of the students' work in The Moving Picture Company's screening room. A meet and greet event followed where students networked with some of the industry's key decision makers. New to ExpoTees London was an alumni reunion event where graduating students met and shared advice from the many Teesside graduates that make up a significant proportion of the animation and vfx scene in London.

Justin said, 'The School of Computing has been producing computer animation and vfx graduates longer than any other university in UK, and the positive feedback from the students and studio representatives at ExpoTees London, reflects our high quality reputation.'

The students also took in visits to Double Negative, Studio AKA, Cinesite, The Mill , The Third Floor and the internationally-acclaimed architectural practice, Fosters & Partners .

But the biggest highlight of the trip was for BA (Hons) Computer Character Animation graduate Domareen Fox who clinched the Undergraduate Animation Award at the 2016 Royal Television Society's National Awards ceremony. Domareen is now working as an art director for Studio Soi, an animation studio in Germany, which has produced *The Gruffalo* and *The Gruffalo's Child* animations.

This year ExpoTees London will be visiting The Mill, an award-winning animation and visual effects, respected for high-end visual effects, award-winning moving image, design and digital projects for the advertising, games and music industries. In 2001 The Mill received an Academy Award for Best Visual Effects for their contribution to Ridley Scott's *Gladiator*.

ExpoTees London feedback

- I had a fantastic time, plenty of networking opportunities, studios were very welcoming, tutors were great (as always)
- Really enjoyed the studio tours and getting to see the way the studio labs are all set up

- Gives students a great opportunity to meet the right people in industry and get feedback on your showreels
- Loved how busy the event was. Plenty of networking opportunities and all the studios were very welcoming
- I enjoyed the studio tours and the screening event. The best part of it all was visiting Fosters + Partners, that was a great experience. I also liked that you helped us by introducing us at the event the first night
- I think the screening was good for the recruiters to see it as you could refer to your work. I think I enjoyed it because none of us had really seen everyone's work so it was really nice to see them all together
- I've updated my LinkedIn network with some amazing people and am actually chatting with the look development lead of The Mill on LinkedIn at the moment. I couldn't have hoped for anything better
- I now feel more confident. Networking with recruiters and tours of the studios was very inspiring
- Thank you guys for the awesome trip : -)

If you would like to take part in ExpoTees London 2018 - or would like further information email **Justin Greetham at scm-enquiries@tees.ac.uk**

EXPOTEES AT THE MILL

THURSDAY 8TH JUNE | **ANIMATION & VFX GRAD SHOW**

THIRD YEAR STUDENTS ARE INVITED FOR DRINKS
AND NIBBLES TO CELEBRATE THE CLASS OF 2017

FRIDAY 9TH JUNE | **STUDIO TOUR**

THIRD YEAR ANIMATION & VFX STUDENTS CAN
JOIN US ON A TOUR OF THE LONDON STUDIO

THE MILL
11-14 WINDMILL ST,
FITZROVIA, W1T 2JG

THEMILL.COM | @MILLCHANNEL

Internships provide platform to showcase digital skills

A team of ten graduate interns have been working at the forefront of digital technology and virtual reality – introducing their skills and knowledge to internal projects and external organisations. The School of Computing graduates, have carried out work for South Tees Hospitals NHS Foundation Trust, a collaborative obesity project with Public Health England, and are using virtual reality technology to develop digital healthcare and education products.

They have been employed as part of the University's Graduate Internship Scheme, which sees graduates placed in a wide range of roles to give them real world experience and support with getting their first foot on the career ladder.

The interns all completed courses in games and animation, and digital media and web. They have spent three months working in a bespoke digital studio on various projects, and a number of interns have been kept on for additional work due to the success of the scheme.

As well as internal projects, such as social media campaigns and 3D modelling, the group has also secured work with external organisations, giving them experience of working to briefs and meeting clients' needs.

A project with South Tees Hospitals NHS Foundation Trust saw them produce an online tool kit and animation to help teach clinicians about prehabilitation – a risk assessment and training strategy which aims to prevent injuries before they actually occur.

The interns have also collaborated with the University's School of Health & Social Care and School of Design Culture & the Arts to produce an obesity animation for Public Health England.

Siobhan Fenton, associate dean (enterprise and business engagement) in the School of Computing, said, 'This has been an extremely successful scheme and a number of the interns are being kept on to complete projects. They have all been supported by individual members of academic staff and have had the opportunity to work in an extremely creative environment. The Graduate Internship Scheme supports the University's employability agenda and we are committed to providing all of our students and graduates with the best possible opportunities to excel in their chosen professions.'

Rose Gibbin, who graduated with a first class BA (Hons) Computer Animation and Visual Effects, said, 'It has been really useful working in a digital studio environment. I feel like we are at the forefront of virtual reality here – using our knowledge and expertise to work with companies and organisations that are only just starting to think about how they can use virtual reality.

Kayleigh Stevens, a first class BA (Hons) Computer Games Animation graduate, added, 'The internship has been absolutely fantastic, working directly with clients and feeling as though you are really making a difference. It is such a positive initiative and has given me so much confidence to pursue my career.'

The ten School of Computing graduate interns are: Kayleigh Stevens, Rose Gibbin, Zoe Llewellyn, Jacob Grindrod, Stewart Pirie, Daniel Mason, Nicole Haigh, Gemma Stephenson, Saifur Siddique and Joe Tyas.

CUBICMOTION

Face your Future

Computing & Web

These diverse research and development projects encompass a range of topics from the highly abstract and theoretical branches of computer science to the practical applications of the theory in systems design, software development, ICT and web development. Our courses are constantly updated to ensure that we are ahead of the game in providing students with the skills to develop systems and solutions using the very latest technologies. This can be seen from the selection of projects on show, which share a common theme – innovation and experimentation. Many of our BSc programmes are reviewed and accredited by the British Computer Society.

Teesside University has invested heavily in the campus providing a range of specialist facilities to support teaching, training and research. The Curve, a flexible and innovative learning space at the heart of the campus was completed in the summer of 2015. The Campus Heart forms an iconic central focus to the campus and a vibrant, flexible and attractive environment for students, staff and the community.

The School of Computing is one of the best-equipped computing schools in the country with cutting edge hardware and software providing a world-class learning environment. Students are supported by outstanding facilities, including a wide range of web, networking and programming studios and dedicated laboratories running industry-standard software.

The School maintains close links with industry, with academics actively involved in consultancy and work force development activities. This feeds into the classroom, ensuring our courses are relevant and up to date.

The high quality of computing and web courses at Teesside has been recognised by a national review undertaken by the Higher Education Funding Council for England. A report by the British Computer Society (BCS) highlighted 'the positive approach to course delivery, innovation and student support'.

Undergraduate

- BSc (Hons) Computer Games Programming
- BSc (Hons) Computer Science
- BSc (Hons) Computing
- BSc (Hons) Cybersecurity and Networks
- BSc (Hons) Data Science
- BSc (Hons) Health Informatics
- BSc (Hons) Information Technology
- BSc (Hons) Web Production

Degree Apprenticeship

- BSc (Hons) Digital Technology Solutions (Web Engineering)

Postgraduate

- MSc Computer Security and Networks
- MSc Computing
- MSc IT Project Management
- MSc Software Engineering

Research

- PhD Computer Science

Graduate Profile

George Milner BSc (Hons) Computer Science

Graduate Software Engineer, Red Embedded Consulting Ltd

I'm currently a graduate software engineer for a small-medium sized software consultancy that specialises in embedded software development within the digital TV and set top box market. I work in an agile environment reporting to a group lead and can get involved in a variety of projects for international companies/customers. My main duties include the full development lifecycle of a project, from software design eg UML, to implementation and testing. I work with several different software languages including C++ and Java. I have direct exposure to the company's clients and attend weekly teleconferences.

After completing my degree, I had already been made a job offer from the company I had my placement year with, Red Embedded, however I chose to see what other opportunities were available before accepting the role. This allowed me to get several offers and make the right decision on where to begin my career. Since starting at Red Embedded I have been involved in several projects for an overseas customer using a variety of technical and interpersonal skills.

I chose computer science after doing a BTEC in IT at college, it was a natural progression to choose a computing related subject, and I felt it would give me more career options. I chose Teesside as they are renowned for giving people opportunities regardless of their background. This meant I could secure a place and a scholarship with my A Level equivalent qualifications. I used the careers service during year 2 while searching for a placement, and they helped me secure a position with Red Embedded. Years 1 and 2 of my degree gave me the skillset required to be involved in the full software development lifecycle within the software engineering industry. I further developed those skills while working in industry during my placement year, which gave me useful experience and aided me during my final year.

The School of Computing have some great knowledgeable and supportive staff, which made for enjoyable lectures and tutorials. They are always welcoming students' feedback to improve the course for future students.

BA (Hons) Creative Digital Media

Archie Riley

User Experience/UI Design

From idea to prototype to product to test. This is an exhibition of user-centred design produced over the last year using skills learnt as a UX Designer at HMRC.

My big project: LoLGym (LoL meaning League of Legends) has been designed using Google's agile design sprint of Unpack, Sketch, Decide, Prototype, Test with real user needs and testing at every stage of the process.

The service is designed to analyse your game data to compare your statistics with the league average and suggest tips for improving in areas where you are below average. All from just your in-game username.

This is done through pulling data from an API with AJAX and JSON, analysing that data behind the scenes and dynamically displaying the results using Javascript.

Lana Hedley

Folio

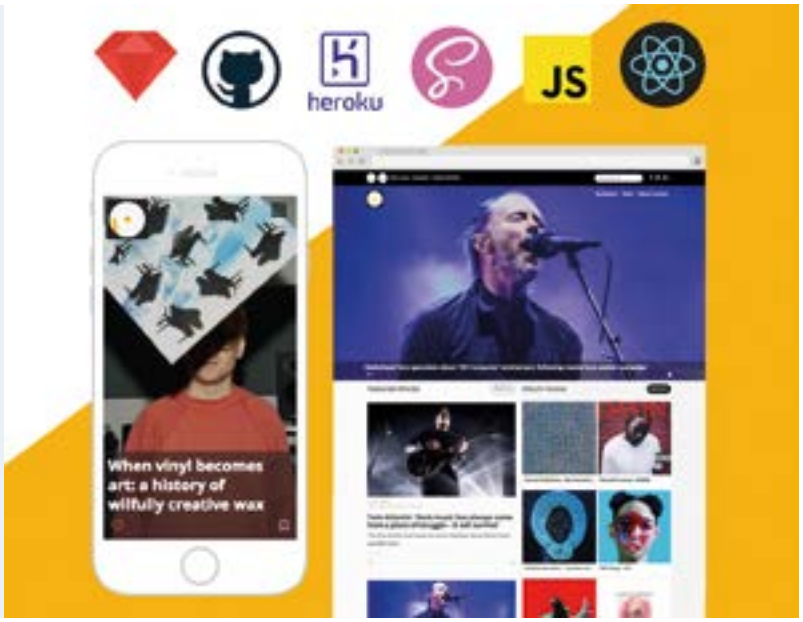
Folio is a website built to help users produce their own digital portfolio through the use of pre-designed templates. The user is guided through the process of selecting work and skills to show, to ensure the best possible outcomes for employment, based on conducted research. The website can also be used by recruiters to scout new talent. It is built in Yii, a PHP MVC framework, and is database reliant in order to store vital user information for display. The front-end has been developed using HTML5 , CSS3, Bootstrap and JavaScript.

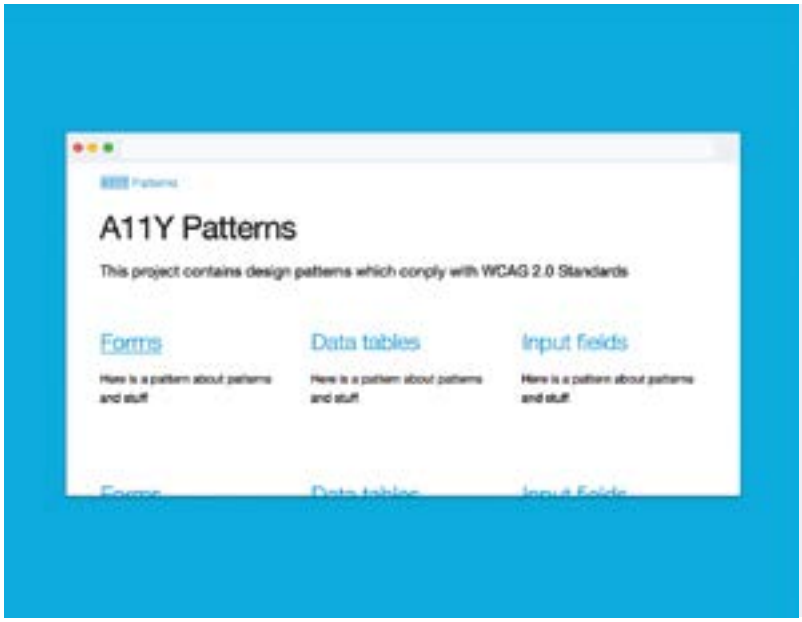
James Warner

Revinyl – Revival: A web product targeted at vinyl records with social media and news aspects

This project looks at the needs of record lovers to see how we can improve their online experience through UX and a usable front-end.

The scope of the project consists of a research based website and the production of a MVP capable of proofing the concept. I have used a modern build process, leveraging tools to build a scalable and maintainable product.





Mark Wright

A11Y Patterns

I have created a resource library of Web Content Accessibility Guidelines (WCAG) 2.0 A - AAA standard accessible patterns for front-end developers and designers. I would like this resource to fit seamlessly into the developer's or designer's everyday workflow. This resource library will be available to view and download via GitHub, and includes elements such as forms, fieldsets and text areas.

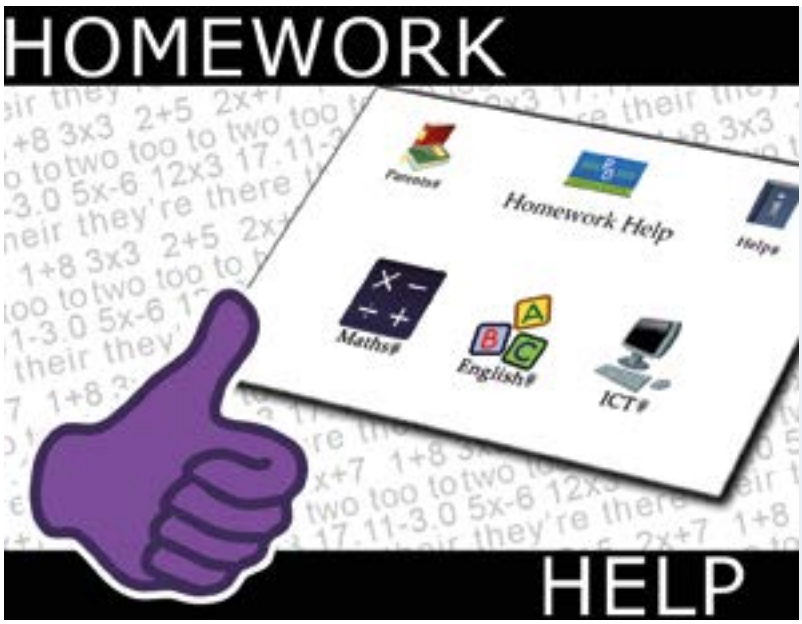
I have made the resource library as accessible and easy-to-use as possible so it can be used by anyone with little understanding of HTML and CSS. This would hopefully lead to creating a better web for everyone.

BA (Hons) Web and Multimedia

Aiden David Maciver

MiMaster.me

My final year project was centred on giving users unrestricted control whilst editing sound within a web environment. The project is a traditional Digital Audio Workstation (DAW) and will be showcased to answer one specific question: 'Is web technology now powerful enough to allow management and training within an audio-driven environment?' The main outcome is to not only push the boundaries of what web technology is capable of, but to also push my own boundaries as a developer. The technologies used include: HTML5, JavaScript, PHP, CSS3, JQuery, MySQL, as well as the Web Audio API which was responsible for providing the base functionality for manipulating the audio waves. It has been created to be used as a learning tool to provide users with a kinaesthetic way to actively learn how to master audio using industry-standard techniques. It also actively demonstrates how the usage of these techniques impacts on the quality and clarity of the processed signals.



Kay Elloway

Improving homework effectiveness

The focus of this project was on improving children's motivation to complete homework. I came up with this idea while I was in my placement year, observing children and their attitudes towards homework.

I have researched why their attitude towards homework is often negative and whether or not this could be improved through the use of current technologies. I have created a small prototype based upon my research, designed to help motivate them.

Calum Hemphill

ConfVR

ConfVR is a conferencing app for smartphone virtual reality headsets such as the Google Cardboard. It is a Node.js app developed with a variety of JavaScript libraries such as Three.js and Socket.IO. Users of this app can create a customised avatar and enter a virtual meeting room with up to 11 other users. Everyone can see each other's head rotations and hear each other talk through microphones. The app utilises the Web Audio API, which allows for faked surround sound.

Sarah Mitchell

Improving the usability of The Tees Shirt Factory website

I am the owner of the t-shirt website The Tees shirt factory, which makes t-shirts about Teesside and the surrounding area. The website has been running for little over a year now, and I have seen many usability errors occur in that time. For this project, I have identified any issues users have had and tried to improve them to improve the overall usability of the website and leading to a growth in sales.

Andrew Ingram

Peer-Peer Resource Repository

Like YouTube, the Peer-Peer Resource Repository (PPRR) is a web app developed for students at Teesside University that allows them to share resources such as videos, online eBooks, journals and websites they have found useful during their course that they feel would benefit their peers. Students can post, rate and comment, and follow other students on particular subjects they are interested in. The web app is built in Yii 1.1 as it is an open source PHP framework and highly customisable with enhanced security features such as password encryption. For the front-end development the web app uses Materialize CSS, the open source front-end framework from Google as it is the most popular and can be distributed across multiple platforms with minimal errors.

Samantha McGovern

Gone in 10 seconds

Far too many websites see their users navigating away to find a 'better' competitor's website. This project focuses on providing a set of guidelines from primary and secondary research to producing websites that are sticky and that users will visit time and time again. A client's website has also been produced from these guidelines. This website has been user-tested to ensure that the guidelines do provide the means to create sticky websites. Throughout this project, I have developed my research skills, consultancy skills with the client and project management skills. The most technical skills that I have developed are web design skills making use of competitor analysis, mood boards and wireframes as well as web development skills using WordPress. Within WordPress, I have developed my HTML, CSS, PHP and MySQL skills.

Jennifer Dunn

The life and death of digital marketing

Is digital marketing dead or just coming to its true life? This project explores digital marketing to its fullest proving that it isn't dying. Two tailor-made digital marketing plans have been created for live clients in different industries. Turnbull and Thomas, e-commerce for online furniture company and NEST, a sporting business. Each marketing plan includes information on the key aspects that make for a successful digital marketing scheme. Intensive research on SEO, analytical tools, PPC, social media, content management and what's to be expected for the future of digital marketing has been carried out and applied to the plans giving an in-depth knowledge area. The clients' Facebook, Instagram and Twitter accounts have also been re-vamped to claim more traffic to the site, and analysed, reviewed and compared between the different industries. Digital marketing is very much still alive and has a vast and prosperous future when applied correctly.

Joseph Kerry

InfoTraffic App

I have developed a traffic app that provides you with traffic information before you hit the congestion, enabling you to avoid it and therefore shorten your journey. To create this piece of work I will be using the Google Maps API and feeding the data streams into it so that they show up as an overlay on the map. I have edited the API with JavaScript and used JQuery libraries to edit the appearance of the front-end.

Michael Lazenby

Explore the North: home isn't a place, it's a feeling

Explore the North is a visual celebration of the North East of England, featuring a cinematic short film with over 10,000 views across YouTube and Facebook, and a modern, interactive travel and tourism website showcasing the best things to see and do across the area. Through production of the film, This is The North. This is Home. I have developed my creative skills in film making, photography and editing, as well as developed further knowledge in graphic design and marketing. Through building the website, I have developed my skills in web hosting, HTML and CSS and hope to learn more in elements such as BootStrap and JS frameworks.

Martin Pollock

Virtual reality art gallery website

This a website built to showcase my photography. It is a virtual reality art gallery that you can walk around and look at the photos. It works on desktop, mobile, Google Cardboard, Oculus Rift and HTC Vive. It was built using the A-Frame framework that is currently in early Alpha stages of development by Mozilla. A-Frame utilises three.js and provides a way to create 3D objects and scenes in a similar manner to normal HTML rather than the maths-heavy method that three.js uses. The website also makes use of a plugin by a developer at Google to simulate the physics. This stops users from walking through the walls and allows the player to jump. There is also a quick travel feature using portals to quickly move around the gallery.

Luke Covell

Academic project management website

I have created an academic project management website to allow web and multimedia students to have a project management website that is tailored to their needs to help with the project management aspects of any of their group projects. The main features should allow the users to set meetings as well as see the progress of the group and the project. The website will be developed as a prototype focused initially on the web and multimedia students at the University. I have further developed multiple different skills in web design and development such as HTML5, CSS and PHP. Additionally it will also help my development of non-web focused skills such as different methodologies.

Jonathan Adam Wall

Social media

As social media is used frequently worldwide by 2.35bn users (Statista, 2016) it is becoming increasingly important for businesses to promote themselves through it. There has been an increase of 175m new users in the last year (Smith, 2016), resulting in businesses using social outlets to grow and promote their business on a vast scale. This prompted an investigation to understand 'what are the implications of introducing social media outlets into growing businesses? This prompted an interest into researching routes businesses can take to enable them to reach out to a wider range of customers. There is a potential gap in the market for developing a strategy in which businesses can rely on a packaged solution to improve or create a social media presence. I chose to research the implications of introducing social media outlets into growing businesses with the desire of encouraging people/businesses to use the web to its full potential rather than provide solutions in design or development.

BSc (Hons) Computer Science

Matthew Frost

Plant view

An augmented reality Android application that displays information relevant to the user depending on their location. The application was originally developed for a client that operated on an industrial site, so the data collected would be relevant to their use case, such as the temperature of a pipe. However, the app is generalised enough that it can work with any numerical dataset, for example the energy usage of buildings at the University. The data is displayed on a graph to show how it changes over time and analytics are applied to highlight any anomalies. To find the location of the user, the Android device's GPS is utilised to allow the acquisition of the device's latitude and longitude to find the position and the bearing to find which direction it is facing. A separate Google Maps web application has been developed to allow the mapping of locations against data in an SQL database. Both the Android app and web app communicate with the data sources using Node JS web services. The web services are used to store and retrieve location points as well as pull the data for each location wherever it is stored.

Zohra Elkamel

Uni Space(WayNee) Android application

The aim of the application is to provide an easier access around the inside of buildings, eg school, university, shopping centre etc, for people with visual impairments. This Android application is based on Java languages and was developed using Android Studio. It provides easier access by returning the information of their location in the building using the Near Field Communication (NFC) tag. Therefore, when the user touches the NFC tag with their phone, the application will read the tag information, which will be in a unique ID number. After reading the ID it searches the database for a matching ID and sends the user an audio message of their location. This application will make it easier for the user to navigate around the inside of the building without getting lost. As an example this will be useful for students as it will show them where they are in the school buildings, making it easier for them to get to their next class.

Rebecca Wilde

BookBuzzer

Bookbuzzer is an iOS and Android app which finds and informs the user of new books, allowing them to add them to lists and receive notifications on information such as when they are released and changes in price. Other information such as the authors can also be tracked. Features also include the ability to store lists of books offline and a local search in bookshops. This is useful to any book lover, to keep constantly updated on new releases as well as having new books suggested based on their lists. There are currently no apps that have the same range of features on the market. The iOS and Android applications are native to each OS, and use an API backend written in Node and Express JS with a mongoDB noSQL database. The API is hosted on the Amazon web service.

Andrew Emmett

Web Service Solutions

I will be exhibiting two web service solutions which I developed during my placement year, my final year project and a couple of android applications. One of the services is We Scan Tickets, which is a fully automated system for selling tickets online for events, is aimed at event organisers. The other service is Funky Trade, which allows event organisers to build accurate vector based maps of their events to scale, this handles planning and measurements for the organiser. I have also developed a website tracking solution for website managers who want to track/view their website visitors data. This includes sessions, browser information, their location, screen sizes, operating systems and more, presented in a series of maps and graphs. One of the android applications is a business app part of We Scan Tickets, the app has a barcode scanner built into it which uses the phone's camera, this app authenticates the tickets at the event. The other android application is a simple procedurally generated survival game.

Daniel Lyons

Common API Pattern Suggester (CAPS)

CAPS is a toolset that helps developers work with unfamiliar APIs. CAPS uses mined 'interesting' API call sequences to deduce missing calls from common call sequences. The main tool produced within this project is an Eclipse IDE plugin, which will parse users' code, suggest missing calls and auto-insert any missing calls found. A command line batch processing tool will also be produced to parse entire libraries at a time. It has been found that working with new APIs can be a challenge for developers taking considerable time, specifically "picking API calls needed to perform a certain task" (Zhong et al., 2009). An IDE plugin will offer developers live code completion speeding up development and reducing errors while a batch processor validates and reports on entire projects at once. CAPS development has been test driven and agile. 'Interesting' call sequences are mined using Fowkes and Sutton's research (2016) in Parameter-Free Probabilistic API Mining across GitHub. Eclipse was used to develop the code and Apache Maven is used as a build tool.

Daniel Bell

Cost-based analysis of serverless computing and running a program across multiple servers

I have researched serverless computing and how it can help a business change its architecture, to reduce cost or time taken to execute a program. I have done this by creating a compute-intensive program, such as changing the file format of videos. I then ran this across a local machine, virtual machines and hosted in AWS Lambda. I compared results to determine the effectiveness of a serverless architecture. I have developed skills in the use of new third party frameworks, have had the opportunity to enhance my programming skills using an emerging technology and have gained invaluable experience to take into industry.

Michael Watts

Automated invoicing system

I have generated an automated invoicing system which is targeted towards freelancers and first time businesses to help manage and plan finances with automated invoicing. The web software allows the user to gain access to their client details, invoices, quotes, payments and their expenses. The web system software was developed using a new MVC framework Laravel, and utilises Angular js, PHP5, HTML5, CSS3 and SQL.

James Batterbee

Testing AI search algorithms using a card game testing environment

This project tests two different AI search algorithms using a unique testing environment, a card-based game. The project would create several scenarios, showing the game at a different stage of play, and testing both algorithms using several metrics to measure their efficiency. These scenarios are repeatable, creating more accurate results. The key aspect of this project is that it measures the efficiency of two similar algorithms in the same application and the algorithms are tested gradually as the application is expanded. Using a turn-based card game as a testing environment is a unique choice and adding more game mechanics to the game would improve the testing results. While two algorithms is a small selection, with future work, more algorithms with a different structure and complexity can be implemented and tested. The application has two components. Firstly, the algorithms and game mechanics are created using Clojure in the Jetbrains IntelliJ IDEA with the Cursive extension. To show the game visually, a Java GUI, created in Netbeans is used, connecting to the application via a socket.

Alex James Brown

An investigation into artificial neural networks

The main aim of the project is to teach artificial neural networks using different learning techniques to play Pong; said learning techniques are backpropagation and neuroevolution. Additionally, other uses of artificial neural networks are shown including classification, recognition, simulated annealing and optimisation.

Assim Al Ali

Workout assistant: a safer way to start the gym

Currently, gyms do not provide support to individuals that make use of the gym. This mainly affects users that have only just started, increasing the chances of poor technique, which increases the risk of injury to themselves and potentially to people around them. This also decreases their performance levels, which in turn prevents them from gaining the optimum fitness from their workout. My project allows new gym users to learn and practice different workout movements (eg bicep curl, air squat) and prevent poor technique. This will increase performance levels and optimum fitness from their workout. The system uses a Raspberry Pi powered digital mirror that is controlled by an android application which allows the user to select the desired workout tutorial, then practice the movement whilst viewing themselves and making any necessary adjustments to achieve the correct movement form. This project was built using a Raspberry Pi Magic Mirror concept and an application developed using Android Studio.

Connor Alexander Jones

Student teacher information manager

I have developed a Java web application that tracks students' progress based upon attendance, behaviour and results data. The application allows for uniformed results entry, reporting and graphics. This application is designed to flag up students should their results begin to slip because of bad behaviour or poor attendance. A C# desktop app redundancy exists in case of loss of network connection. The skills developed are object orientated programming, Java programming, NoSQL with MongoDB, cloud based programming with Amazon web service, HTML, JavaScript, CSS, service orientated architecture design, C# programming, data analytics, reporting and graphics.

Nathan Kelly

Modular teaching within virtual reality

My project is my rendition of a VR teaching application for children, with the ability to add custom questions and lessons to assist teaching in a fun, structured and modern way. This project is the fruits of many months of learning and building in Unity and my first insight into application development.

Alongside this will be a demonstration of a project that I am involved in with the partnership of the RAF Cadet 1932 (Blackhall) Squadron, the project is the design and implementation of virtual reality flight simulation to aid in the teaching of basic flight mechanics before the Cadets get into a real aircraft. This has helped with my consultancy skills and is a fun project that will help in the education of the future commercial pilots of Britain.

Cameron Chappell

Do bitcoins have the security, scalability and viability to become a modern day currency?

My project is all about the cryptocurrency bitcoins; bitcoins are a virtual currency and payment system created in 2009. I have examined the method of obtaining the currency through the method of bitcoin mining. This is a way of obtaining them by setting your computer to solve a maths type problem to keep the transactions of the coins going. I researched the viability of the currency with its positive and negatives, and the security as it is virtual so how can you be sure it's safe if you can't hold it? I have included legal and ethical points of view of this currency as it caused a stir in America because it isn't centralised they would like to implement legislation on the cryptocurrency which goes against what the creator meant for bitcoins to be. My project resulted in the successful completion of a research paper. Gathering information and analysing, are transferrable skills in all aspects of IT work. Also doing a part of my research on security will open up that pathway as I would be looking deeper into that aspect of my work.

Mihaela Iuliana Brinza

Online shop - La Boutique Préférée

This project is a web application that allows the customer to visualise the products of a store, their prices, available items and details in order to make purchases. The web application includes a wide range of products such as clothes, footwear, accessories, and makeup. All sections offer products for a number of three types of possible customers: women, men and children. Each category allows the user to see the available products and if desired, the user can identify their details such as the sizes, the available colours or the materials of the products. The product will be created making use of a Microsoft Visual Studio 2015, ASP .NET, JSON .NET, HTML, CSS and a local database.

Ryan Lee Philpott

The design and implementation of a wide area network

An international company wants to upgrade their network and I have presented the pros and cons of why I chose certain topologies and routing protocols in the design of this upgrade. The artefact includes a network design, visually showing what the network and SubNets will look like through professional software for example, OPNET Riverbed and CISCO Pactek Tracer. As well as a design, I have simulated the network on the aforementioned software packages to ensure that it would work if it was physically implemented.

Michael John Wolstenholme

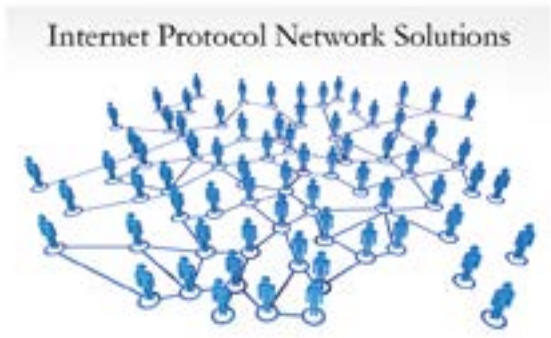
Creating a bespoke hospitality database system

I am currently working in the hospitality industry and was keen to develop a bespoke database system for a resort hotel which enabled the various departments to carry out one of their main functions, ie making hotel, spa and dining reservations. The departments link closely to one another and rely on access to regularly updated information to ensure seamless transitions between departments. The system's interface is easy to operate and is capable of storing and retrieving appropriate data efficiently and effectively.To retrieve information quickly from stationary devices the system uses a cloud server. Reports include: overview of bookings, revenue taken and predicted, occupancy levels and function sheets for events. Skills I developed include working to tight deadlines, planning workload, good communication skills, working on my own initiative, data validation, problem solving/solutions, advanced SQL, research including specific topics such as cloud servers and NoSQL databases.

Grant Watson

Database oriented cross platform compatibility

I have created a movie review application with separate desktop and mobile versions. The desktop application makes use of industry design patterns thereby providing extendable classes and code. It also incorporates a recommender system based on an algorithm determining what the user would be interested in. The algorithm works around the movie type a user browses, their history and favourites. A user can select any number of movies to store as favourites, which can be shown in the desktop and mobile applications. The app provides a mobile interface to read the movie reviews. A database wirelessly connecting the two sets up a possible network of devices all running the application, with reviews, written on any desktop application, being able to be displayed on any other version of the application.



Liam James Pemberton

IPv4 vs IPv6: The effects and consequences of switching to IPv6 worldwide

My project focuses on the problem the transition to IPv6 from IPv4 that most systems use today. IPv6 is the most recently introduced protocol that assigns an IP address to a device when connected to the internet. Introduced in the 1990s, this new protocol would be the answer to the impending realisation that IPv4 would soon run out of available IP addresses to allocate. However, the lack of companies and systems still not switching from IPv4 to IPv6 is staggering. It is estimated that only around 12% of all systems have switched from the old protocol to the new, despite the marked improvements. I have further developed and improved networking skills, project building skills and experienced a fresh area of technology that will likely be at the forefront of IT network related jobs over the next few decades. My project explores the effects and consequences of implementing IPv6 across a wide range of network scenarios – assessing whether the switch to a brand new protocol should be encouraged immediately, or the current method of utilising IPv4 and slowly transitioning over is the best option for companies.

Benjamin Hayward

Preposturous: Posterial assessment application

This exhibit is demonstrating the application Preposturous, both in its mobile (Android) and desktop forms. Preposturous for Android was created last year, for chiropractors and other clinicians, with the ultimate goal of giving clinicians a cheap, fast alternative to their current methods of postural assessment. The mobile application was developed with a group within Teesside University (MostlyHarmless), as a project to demonstrate ability with Android development.

The application is currently in the process of being medically trialled and polished off, however to expand upon the user -base, I have created a desktop application. The priorities when creating this application have been primarily focused on accuracy, security, and ease of usability, so that the application can be used in a medical setting, by somebody who isn't very tech-literate.

Thomas Wyatt

SportSupport

SportSupport is a web application for viewing sports related information (aggregated from APIs), in the form of a single page application, updating displaying information relating to teams which a user follows, along with recommendations of data about teams which the system has determined to possibly be of interest through various techniques.

Skills developed during this project include JavaScript (which was not particularly part of the syllabus, along with experience using the AngularJS framework for developing the SPA, as well as HTML and Bootstrap.

Further development in knowledge of web applications was also obtained, with the implementation and consideration of security/accounts for the application, as well as further experience creating and using a web API.

Jacob Fry

Streamlined job application start-up company

My project is the development of a MVC web application for the simplification of job applications. My intention is for my start-up company to become the Facebook for job applications; being simplistic, clean and easy to use. Skills developed include greatly improved C#, HTML, CSS, JavaScript coding and SQL database creation and maintenance.

BSc (Hons) Computer Science (Foundation Year)

Maria Natalia Porras-Arbelaez

TeesSport

This project will consist of a web sports application. The application will serve as a league reference for users where they can check the latest fixtures and results of all the clubs that play for their university. The main aim is for students to have somewhere to be able to check all this information in one place regardless of the sport. Each club will have a section where it will display the amount of players they currently have, the league in which they are playing as well as information of their weekly training sessions and fixtures.

BSc (Hons) Computing

Andrew Lee Pearson

.Net Import Export External Library

Having worked in industry for over three years as a web developer with a company that operates an in-house bespoke e-commerce platform with multiple deployed websites. I was approached by a live client operating their own e-commerce platform who would like it to utilise import/export capabilities. I have created a .Net external library that can connect to this platform and generically import and export data to and from the system. The library also has a variety of settings such as a task scheduler which will allow users to define when an export of data will be allowed to run for example. The final product uses as many different technologies such as C# and .NET as the main coding language alongside SQL Server for database needs. Other skills shown include HTML, CSS and the inclusion of external .Net packages: FluentScheduler and EntityFramework.

Duncan Haig

Tracking the state of an extremity using the musculature in the limb

This project provides a completely non-intrusive method of capturing the state of the hand. This method does not rely on cameras placed around the room, and will not be confined to only act within a limited area, my aim is to read the state of the hand using the only the muscles in your arm, providing you with completely hands free experience.

Jessica Jane Bates

CMS (including appointment scheduler)

Even with today's technology, many small salons still rely on paper-based appointment books and word of mouth for client growth. I will be showcasing a small scale content management system built for the beauty industry, allowing smaller salons to gain an online footprint through managing their website, staff, clients, appointments and services in one online central location. The front end application was implemented using HTML5 and CSS3, with integration of jQuery and AJAX, whilst the functionality was written in C#, making use of Microsoft Visual Studio 2013 with combination of MVC5, .Net and Entity Framework. The application uses Microsoft SQL Server database to store and manipulate data. Carrying out this project has also been personally beneficial as it allowed me to research into areas of software development that are constantly changing, giving me an opportunity to vastly improve my knowledge in technical areas such as programming, databases and design.

Jack Vickers

DevelopYourself (learning tool)

The aim of my project was to develop a web application named DevelopYourself that allows its user to learn more about programming and its related concepts by developing their knowledge through a series of tests and lessons. This project utilises the latest development tools such as ASP.NET MVC 5, Razor and ADO.NET in combination with an iterative development methodology, to ensure the product is delivered on time, with the capability to be extended upon. In addition to the creation of this web app, I have collected user test data from the web application and performed a quantitative analysis of this data, the results of which I have then used to form the basis of my research paper.

Holly Ann Million

The Big Eat

The Big Eat is a functional website solution that was created for a live client over the period of 12 weeks. This project gave me the opportunity to develop my consultancy, research, IT law, project management and web design skills. Users within this website will be able to find out information about the café, and make orders directly to the café for pick up. Users will also be able to create an account, which will allow them to access their own membership page and use the ordering feature within the site. This website was created in the well-known open source platform WordPress that after careful consideration with my client, could offer her the best platform for her businesses website. Due to the business not having a website before, establishing the brand was an important aspect of the project, and I therefore gave careful consideration into the look and feel of the site, along with the logo that would be used on the website.

Mark Garratt

Multi-layered web consultancy project

My project gave me the opportunity to work with live clients to re-establish their online presence by creating from scratch an intuitive, functional website solution using a content management system. With a focus on learning and improving my consultancy and project management skills, my project required me to pull together all I have learned over the course of my time studying computing. I gathered together my knowledge of consultancy, research, web design and development, IT law and project management in order to successfully meet client requirements. I created the website in the well-known CMS WordPress, successfully developing my knowledge of it further by exploring the more advanced features that working with an open source web design platform has to offer.

Calum Howse

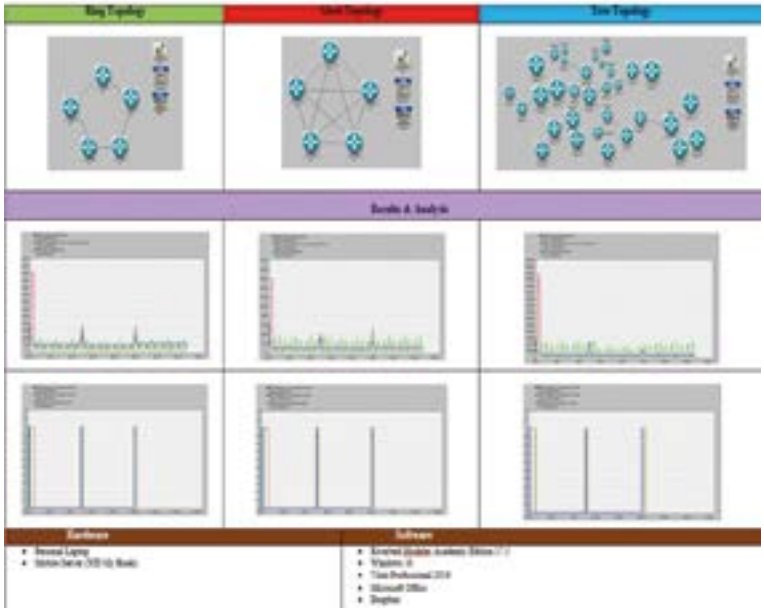
Investigation of HTTP cookies

I have chosen to exhibit the work I completed as part of my final year project. My objectives for this project were to investigate the data being stored in the HTTP cookies used on popular websites to ensure that the information they contained was both ethical and legal. In order to complete this objective I also had to research the current software available for capturing these HTTP cookies and reading the information stored inside them. Whilst working towards the completion of the project I improved my overall project management skills, which was a result of the limited amount of time I had for my project and as such needed to ensure that I managed and used my time effectively. I also developed my research skills as I needed to find and analyse different pieces of software for use in the project while also ensuring that the software was legally usable in the way I wanted to use it.

JJ Fong

Comparative study and performance analysis of routing protocols

There are several routing protocols used in the network practical infrastructure to propagate the network topology to the neighbour routers. For example, Enhanced Interior Gateway Routing Protocol (EIGRP), Routing Information Protocol (RIP) and Open Shortest Path First Protocol (OSPF) are the dynamic routing protocols. However, there are still numbers of routing protocols available for implementing a network infrastructure, but a right decision for choosing an appropriate routing protocol with best performances is the most considerable before implementing any network infrastructure. Hence, there are numbers of parameters to be consider for choosing the appropriate one. For my final year project, EIGRP, RIP and OSPF, for real-time application have been implemented using Riverbed Modeler Academic Edition 17.5 simulation tool in three different network topologies: Ring, Mesh and Tree. The performance analysis for the network convergence and network traffic have been captured and compared in order to choose the best performance routing protocol for a network topology.



Alexander Jones

Native iOS stress relief app for ASD

A native iOS app designed to function as an electronic 'fidget toy' targeting individuals with ASD (Autism Spectrum Disorder) to help relieve stress through use of the application and to equip users with multiple self-soothing techniques they can use when away from the application. The app functions through a simple game-like interface that will provide positive, controllable, sensory input to the user and is designed to help manage negative emotions by providing a point-of-focus separate to their immediate external environment. The development of this project makes use of research into both healthy and unhealthy restricted and repetitive behaviours (RRBs), as well as more general stress relieving techniques. The application is a native iOS application developed using Swift 3.0 and making use of Apple's SpriteKit framework - with all user settings stored locally within a property list. This project builds upon and showcases my existing mobile design and development skills and gives me the experience of independently taking a project through all stages development to create a polished final product.

BSc (Hons) Computing (Foundation Year)

Sankeeth Sriranganathan

Brainstorm - learning environment

Brainstorm is a web application that provides staff and students with tools to manage their educational time and content. Personal learning will be the area of focus for each tool provided in the application, so that staff and students can study at their own phase and style. The web application will be built using a PHP framework, CSS framework and MySQL database.

BSc (Hons) Information Communication and Technology

Michael Lister

Security measures to implement within the NHS

The aim of this project is to improve upon the pre-existing network infrastructure within medical facilities (NHS) to improve security as well as availability of the network (N3.nhs.uk, 2017). This was achieved through research into how the existing network functions are maintained as well as what would happen if the network went down, eg what contingency plans would be in place.

Primarily the focus will revolve around security as medical records contain incredibly sensitive information, especially when applied to an individual and so it is of the utmost importance to protect this information. This also links into existing acts such as the Data Protection Act 1998. Finally speed and availability of the network will be improved upon as maintenance should be undertaken on all networks regardless of the purpose.

Adam Powell

GO-GYM

GO-GYM is a personal comparison website which allows the user to select fitness prerequisites for gym membership. Comparisons will be made available based upon these prerequisites. Once the user has selected these prerequisites including price and facilities, a select number of gym membership options will appear on the screen. The user can then make a more informed gym membership decision. GO-GYM will then direct them to the appropriate gym website for booking and contact details. This website was built using the python programming language along with an SQL database. Python allowed me to create a number of data sets scraped from a number of sources on the World Wide Web. These data sets were then imported into the SQL back end database, which then initiated the primary comparison tool on the front-end website.

Enricko Serafin Patio

General comparison between internet protocol versions 4 and 6

I have created a research paper about the comparison between the internet protocol version 4 (IPv4) and internet protocol version 6 (IPv6). The paper contains information about the specification of download/upload speed, quality of service, and the durability of transmitting enormous amount of data across the network. This includes the differences of each internet protocol in terms of architecture, and how they operate and be connected to each other (tunnelling). The quality of service for both internet protocol has been analysed and checked thoroughly using a simulation of voice over internet protocol, and I have determined which one is better on a long and short run. I have managed to increased my networking skills, in terms of dealing with switches, hub, router, cabling and configuration for each of device that have been mentioned. I have performed an extensive literature review to gather more information about the transition of IPv4 to the newest IPv6.

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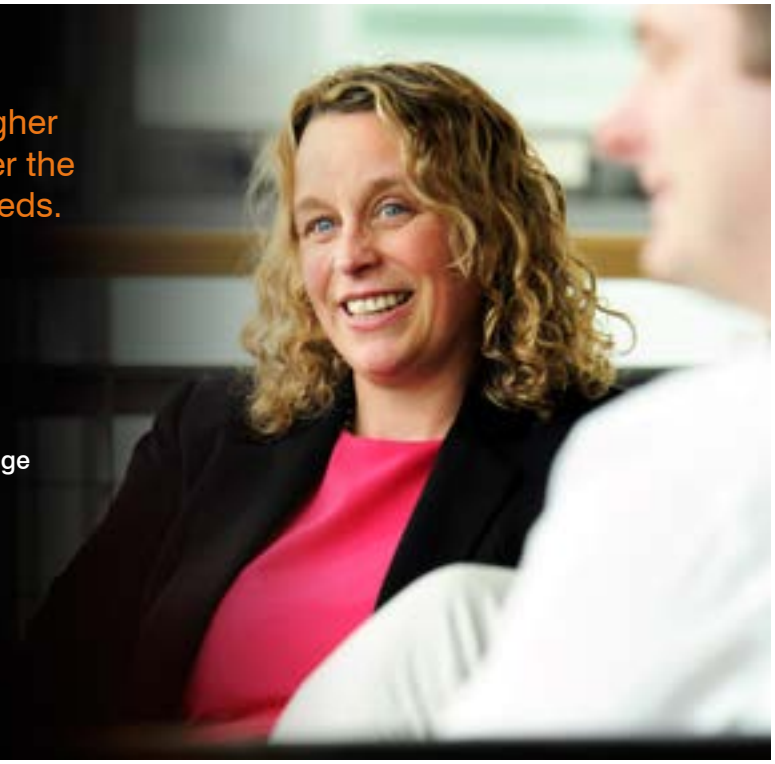

From April 2017, government funding for apprenticeships in England is changing. All employers with an annual wage bill of over £3m will be required to invest in apprenticeships by contributing to a levy. Funding is available for all employers towards the costs of apprenticeship training and assessment.

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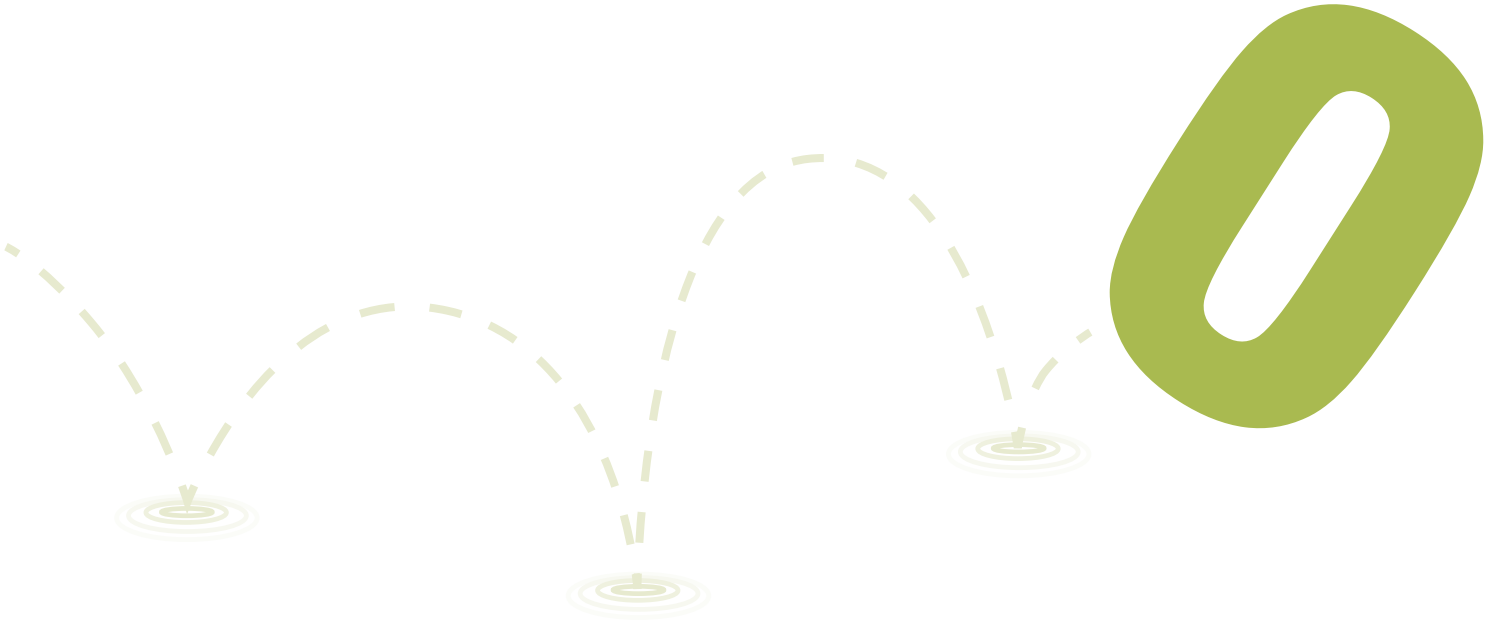


Animation & Visual Effects

These projects demonstrate the level of expertise by students on the School's animation and visual effects courses. The projects, chosen and developed by the students themselves, allow them to focus on a wide range of skills that enable them to integrate seamlessly into their chosen industry and be productive from day one.

Graduates from these courses have gone on to achieve success in major animation and visual effects studios in the UK and around the world such as Framestore, Double Negative, Moving Picture Company, Cinesite, Pixar, DreamWorks and Industrial Light & Magic. Some have forged successful careers in games development and industries such as medical, oil and gas, and architecture. Others have become successful entrepreneurs running their own studios based locally and elsewhere in the UK.

Teaching in this area is backed by Creative Skillset, which accredited our BA (Hons) Computer Animation and Visual Effects, and BA (Hons) Computer Character Animation. *Animation Career Review* also rates the School in the top 20 places to study animation in the world.

Teesside University is ranked in the top 20 in the world in the Animation Career Review list of top international schools. The School of Computing is one of the best-equipped computing schools in the country and our students enjoy using dedicated facilities that are provided for animation and visual effects, with access to a traditional animation studio that combines cutting edge technology with wet room facilities, as well as access to our world class AVFX Studio. We also have a motion capture studio right next door, where our students can find some of the best motion capture equipment available in the UK. Studios are available 24 hours a day during term time.

Teesside University has invested heavily in the campus providing a range of specialist facilities to support teaching, training and research. The Curve, a flexible and innovative learning space at the heart of the campus was completed in the summer of 2015. The Campus Heart forms an iconic central focus to the campus and a vibrant, flexible and attractive environment for students, staff and the community.

Undergraduate

- BA (Hons) 2D Animation
- BA (Hons) Computer Animation
- BA (Hons) Computer Character Animation
- BSc (Hons) Technical Direction for Visual Effects
- BA (Hons) Visual Effects
- MComp (Hons) Visual Effects

Postgraduate

- MA Computer Animation and Visual Effects
- MA Concept Art for Games and Animation

Graduate Profile

Ruthie Nielsen BA (Hons) Computer Animation and Visual Effects

Junior character rigger, TT Fusion

Teesside University came up a lot when I was looking online for universities that had good animation courses, although I was originally looking at media-related courses. One of my teachers mentioned a different university so I visited both open days and I'm so glad I did. When I visited Teesside everyone was so passionate about animation and so warm and friendly that I knew I wanted to go there straight away. I also chose Teesside because it has a reputation as one of the best universities for animation in the UK.

Before graduation I was doing some freelance post-production work on the film Irene's Ghost for the University, which I had finished working on in my final year. The University had more freelance work to offer me after graduating but I accepted a job as a film runner at Moving Picture Company (MPC) in London. I worked hard at MPC and continued with personal work in my spare time. I left MPC after two months, when I accepted a job offer for my current position at the game developer company TT Fusion.

I'm currently a junior character rigger working at TT Fusion, a division of TT Games. We work on AAA family-friendly games. At TT I am responsible for creating control rigs for a wide variety of characters, creatures, vehicles and props. I am also responsible for writing python and MEL scripts to automate processes and support the animation pipeline.

I hope to continue working on AAA games at TT Fusion. I am extremely excited about upcoming projects and hope to have made important contributions, not only to those projects, but also to the rigging and animation pipeline.

I would definitely recommend Teesside University and my course. The course taught me the skills I needed to get into the industry and the student facilities are right next to the tutors' offices so they were always around to help. I learnt a lot of practical skills that have been useful, but the most important skill I learnt was the ability to take criticism. It's a skill that's extremely difficult to teach, but I found that regularly getting verbal feedback from the tutors really helped me to not only accept critical feedback, but to apply it as well.

BA (Hons) Computer Animation and Visual Effects

Rachel Griffiths

Mindswimming

I will be showing my final year project, Mindswimming. This is a short film on the theme of following dreams. The skills it features are my modelling, texturing, lighting, simulation and rendering skills.

Oliver Hallas

Exploring a narrative through the use of modelling, lighting and rendering techniques

I am showcasing a realistic short sequence, where the scene is frozen in time and the narrative is driven purely by modelling, lighting and rendering techniques as I aimed to challenge myself and develop these skills further. The scene consists of a nerd-themed basement with a sculpted nerdy character as my focus point. I have created an assortment of high quality assets, ranging from hard surface to organic models, using lighting and texturing to compliment the scene. The bulk of the modelling was crafted within Autodesk's Maya whilst the character was sculpted within Pixologic's Zbrush. I used Autodesk Mari, Adobe Photoshop and Allegorithmic's Substance painter to create my textures with Pixar's RenderMan to render out my scene for a final composite within The Foundry's Nuke.

Younghao Liu

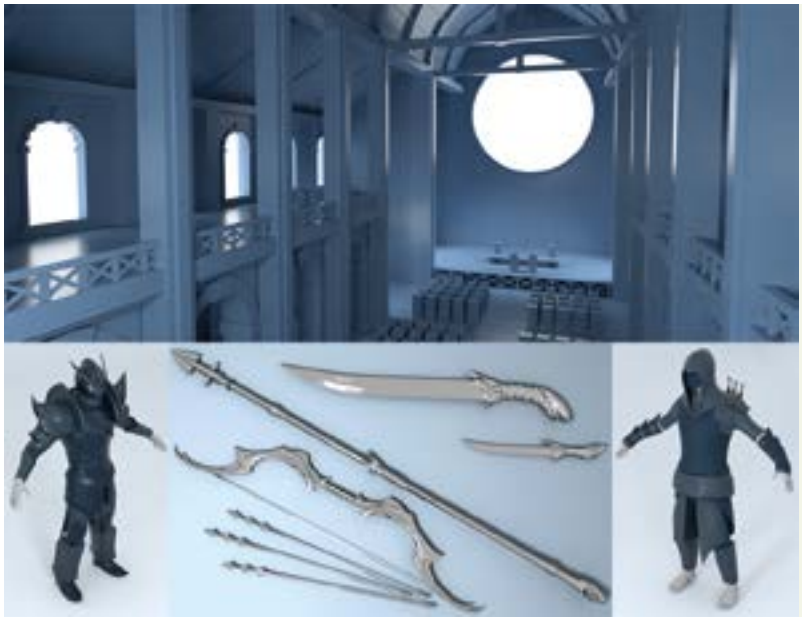
Experimental title sequence using modelling, texturing and lighting

The goal of my project was to create a title sequence that uses a set of models to tell a story. The story behind the project was to show three warriors from different ages accompanied with the animal that symbolises or is associated with them. They are fighting each other so that they can retrieve the treasured sword. The style I chose displays the models in a still action pose, with each sculpt posed as if they are moments away from the killing blow. My project is about 90-seconds long, it displays three sets of models throughout the sequence. The idea is to display the models one by one in a way that will keep the audience fixated on each sculpt and then at the end reveal that all three sets of models are together which forms the story.

Ambereen Khan

The Experiment

My project is primarily focused on cinematography, and includes modelling and texturing. It is a single steadicam shot sweeping through a room telling the story of a break-in by moving past what's been left behind. The room is part of a Victorian mansion, which has been turned into a lab with equipment and notes covering every surface. The camera begins by moving over a table, with notes on the dangers of a recent invention, before light catches off to the side where you see a smashed window, reflecting light on to the shards on the floor. This light then catches onto the door of a safe that has been emptied. As the camera moves to the safe, a series of bullet holes become visible, revealing smashed items. On the floor, a pool of blood catches the light, causing the camera to move towards it. There is a rustle of fabric and the camera turn to the window, then looks out to the city where, in the distance, you see an explosion.



Harry Theobald

Eden

Eden, focuses on modelling, lighting and cinematography. It also includes concept designing, storytelling, and texturing. I have used hard-surface modelling as well as organic modelling. This story is about the Dragaunians, people who ride dragons. Four factions; Air, Fire, Ice and Earth, each have dragons that link to the element of that faction. The leading faction, Air, have kept the peace for centuries. Fire decide that Air's reign is over and decide to challenge them. Air try to settle disagreements with politics but Fire have already begun preparing for war. Air prepares for the defence of their city. There is a battle for Eden, their home city, but Air don't succeed. Fidron, the leader of Fire stands outside the palace gates gazing over the aftermath of battle. For the main element of the project, I have produced a short 45-90 second animation at 1280x720p which comprises three still scenes with characters posed, tied together with one big camera movement. The scenes are presented in bullet-time with some very slow movement.

James Weston

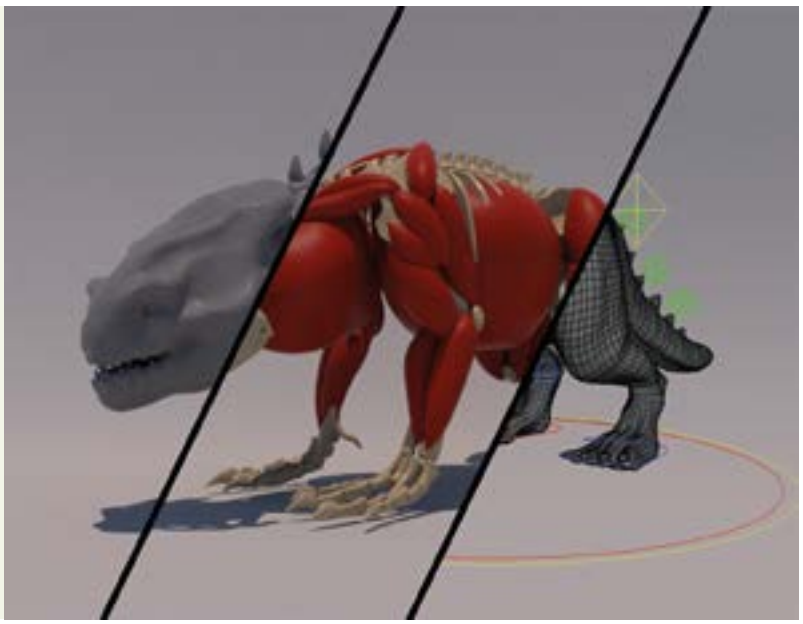
Used or abused?

My goal for this project was to create a complete, near photorealistic environment scene made from computer generated imagery. The aim was to create a working mechanics workshop featuring a dirt buggy (Ariel Nomad) mid-way through repairs after being used. The buggy is mostly whole, apart from a few missing and badly damaged parts. It has been placed on a car lift surrounded by equipment you would stereotypically find in a well-stocked workshop; tools, machinery such as a drill press, welding equipment and more. The garage is an old converted room with large bay windows allowing plenty of natural light. The overall look of this piece is grungy, naturally lit with the textures of old and well-used equipment.

Richard Stubbs

Advanced rigging techniques: Hyper-realistic and stylised deformations

My project focuses on advanced rigging techniques used in the creation of hyper-realistic and stylised deformations which allows me to showcase several rigs. This includes a hyper-realistic quadrupedal rig and stylised-cartoony bipedal rig. The quadrupedal rig is tailored to allow the animator to have comprehensive control over the movement and expressions that are possible for hyper-realistic creatures. The stylised rig utilises squash and stretch techniques and allows the animator intuitive control to push expression, as well as to pose the character in an exaggerated fashion. I created walk cycles and calisthenic tests which demonstrate the functionality and usage of both rigs. The final outcome was aided by my research on quadrupedal muscle structure and anatomy, as well as animation principals for stylised characters.



Jack Barber

3D rigging techniques

From the models I have acquired, I have a created a range of three rigs. One is a cartoony character rig with and IK/FK setup in the arms and legs also with stretchy limbs, as well as the spine. It also has a curve-based facial rig, reverse foot rigs and multiple controls for the hands to make a very flexible rig. There's also a quadrupedal horse rig that has a muscle structure to create realistic animal deformations. Additionally, I have a car rig that has a dynamic wheel setup and working suspension with squash and stretch. I wanted to show off the range of controls I can create to make a rig more dynamic and flexible.

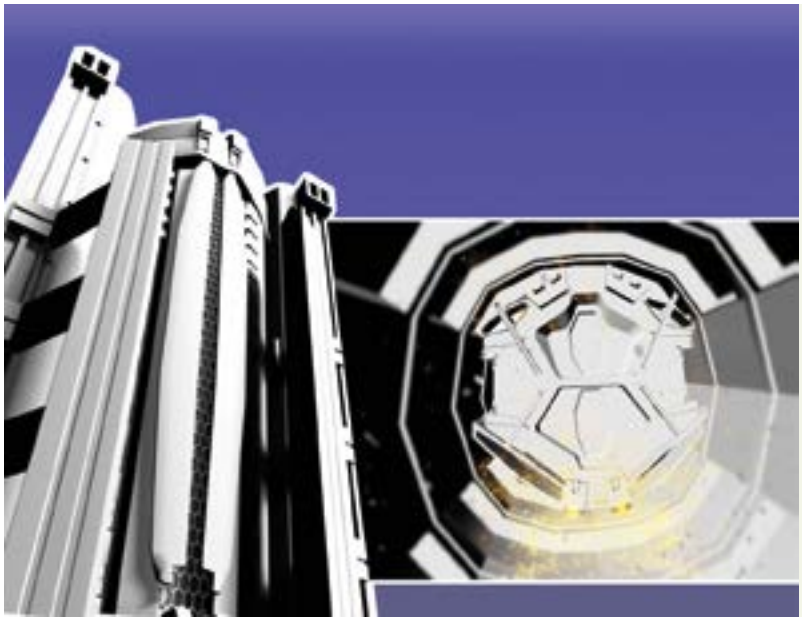
Joshua David Bentley

Ouroboros - Visual development and 3D modelling

I have generated a body of work intended as visual development for a fictional TV series, film or game. The work consists of 2D concept art for a number of the characters and environments in a rich and lore-filled universe centred on a narrative that I have created. The work culminates in a 3D panorama featuring one of the characters in the narrative. I have greatly improved my experience with 3D modelling software, specifically Pixologic's ZBrush and I have continued to hone my digital painting and drawing skills and knowledge throughout the process of this project.

Michael Hulbert
The Second Person

I have created a short narrative, about a man trying to change the world with robotics. Filmed from the robot's perspective, the viewer will watch as this man assembles it and finally see the robot at the end. Primarily, I have used compositing techniques to create this. The actor and props were all filmed within a Green Screen studio, making all the scenes created with a combination of CGI and compositing techniques. And the robot itself was created in CGI software.



Su Ling Cheah
VFX simulation

I have created a scene from Total Recall (2012) with my own twist on the cinematography and storytelling aspect. The scene that I have created is the destruction of the gravity train at the end of the movie. The reason why I chose this piece is because I would be able to learn and understand three out of the four most used elements in the industry. To achieve the result I wanted, the whole simulation is done fully in SideFX Houdini with its built-in rigid body system, fluid system and pyro system as well. I took a progressive approach to create each simulation individually in order for me to be able to judge the quality of the simulation before compositing the layers together.

Tom Arne Monsen
Essentials of compositing

My project improves on the essential techniques required to work in the industry where my skills are displayed in a shot of 14 seconds. We follow a man who walks in a pedestrian tunnel in London when suddenly the glowing panels on the wall starts rotating around, turning to glass and then revealing a beautiful futuristic city, ending with a spaceship flying by. I've displayed the use of four different techniques; roto, tracking, CG, FX, backplate implementations and consideration of colorspace. The shot is presented in 1080p, full HD. I have recorded the footage myself, edited it together, made the CG elements, the roto, tracking and so on. The only thing not created by me is the matte painting but I have made some slight modifications. Software used: - The Foundry's NukeX, Autodesk Maya, Adobe Photoshop, Aallegorithmic Substance Painter, Allegorithmic Substance Designer, Adobe Premiere Pro CC and Blackmagic Davinci Resolve.

Ina Stokland

Norwegian folklore comes to life

I am displaying an animation showreel which captures some of Norway's magical tales. I selected two characters for this; Huldra, a beautiful, naked woman with a cow's tail who uses her stunning looks to lure men into the underworld, and a typical Norwegian troll who exhibits strength but lacks intelligence. The primary aim of the project was to develop my animation skills. The character creation was limited, hence my decision to use basic clay texturing with ambient occlusion. The stark contrast, in size and inherent behavioural traits, of the characters was very much deliberate and used to develop and display my knowledge and use of human anatomy. Utilizing Pixologic's Zbrush 4R7 I created character sculpts. Retopology and animation was done with Autodesk Maya 2016. Applying the Advanced Skeleton Rig for Maya to the characters saved time for animation. Showreel rendering done using Pixar's Renderman for Maya.

BA (Hons) Computer Animation and Visual Effects (with Foundation Year)

Joseph Holroyd

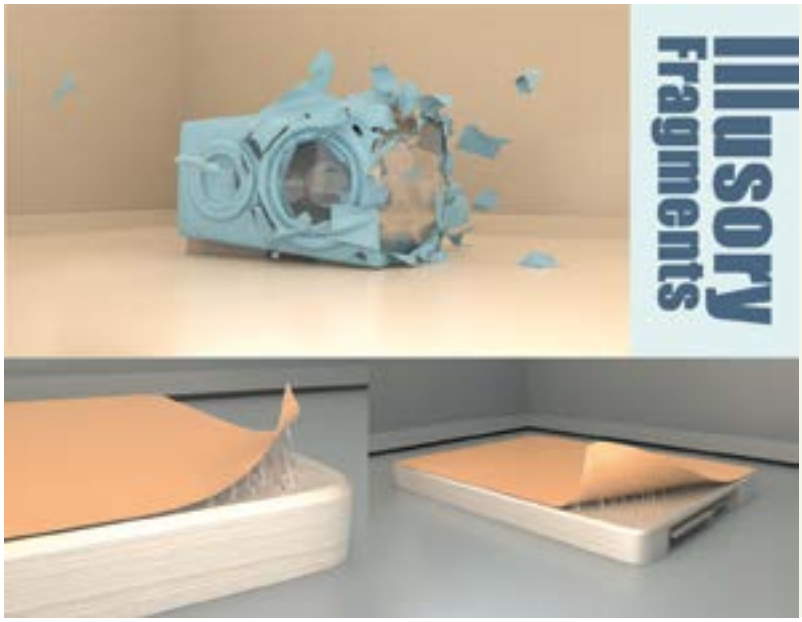
Modelling R'lyeh

Based around the short stories by H P Lovecraft, I have modelled the mythical Kthonic city of R'lyeh, combining elements from the works of M C Escher and Greek architecture. Because this is a mythical city lost in a time long before man, I did not want my architecture to reflect too much of a recognisable movement. This Citadel would not have been used by man, and it was for a long time underwater and incorporated a lot of deep sea elements into its design, as well as Cthulhu-esque patterns, statues and hieroglyphs. To blur the period of architecture, I incorporated motifs from other movements – such as Russian constructivism – but I modelled with the idea that there was more than one point of gravity. The majority of this project was box modelled in Autodesk Maya, but I have also been organically sculpting in Pilgway's 3D Coat. The textures have been made using 3D Coat's painting room, Adobe Photoshop CC 2015 and Crazy Bump.

Zachary Ives

The Kraken's Prize

A short film in which a camera moves around the scene of a pirate ship in a cove at sea. The scene will be moonlit with some fill lights coming from lanterns on board the ship to highlight areas of interest that will be filmed by the camera. The aim for the lighting of my scene is to portray the mood of a secretive smugglers' cove. The modelling quality of the scene will be the main focus for my project, meaning that I will spend the majority of my time on the asset creation and fine details of the geometry.



Kai Jin

Illusory Fragments

I have produced a VFX and compositing short film, which includes nCloth, particle and fluid effects. It is an experimental and technical visual effects test reel lasting around 1 minute 30 seconds that includes a breakdown. The projects involve footage acquisition and HDRI, motion capture, creating CG elements and environments, simulation and compositing. There are three scenes - the first scene is a peeling effect on the CG objects, cracking and lifting away from the surface of objects; the second scene shows a cloth floating in the air. The cloth is generated using nCloth and it is colliding with a transparent motion-captured human rig; the third scene demonstrates a fluid simulation. The programs that I'm using in this project are Autodesk Maya 2016, MotionBuilder 2016, The Foundry's Nuke, SideFX Houdini, Pixologic ZBrush, Pilgway's 3D-Coat, Adobe Premiere Pro, Adobe Photoshop and PT-Gui (HDRI).

Alejandro Torrado

Creating natural and imagined phenomena in Houdini

The focus of this project was to create physically believable effects, simulated using up-to-date workflows and software. I wanted to cover the popular areas of simulation for VFX such as water, smoke and destruction. I wanted to create visually appealing, naturally moving effects while aiming to be efficient with simulation times. This project has taught me how to approach creating a variety of simulated effects and how to use the tools necessary to manipulate them. I used SideFX Houdini for this project as it offers a great range of tools and a user friendly, node based, procedural workflow.

Iyas Abdullah M Duhaithem

Decadence

I have produced an animation, exhibiting my skills as a 3D generalist; mainly highlighting my skills in surfacing, modelling and dynamics. The concept of the environment is a picturesque Victorian era interior. An assortment of ornate set pieces will be on display, such as an armour set and a centrepiece. As the sequence progresses, the environment ages into to a dilapidated state. This accompanied with the use of camera angles and movement attaining a cinematic look, while demonstrating the environment.

BA (Hons) Computer Character Animation

Jonathan Tillson
Slalom

Slalom is a short animation about dancing on rollerblades. The piece focuses on character animation, however all assets, which cover the entire production pipeline, were made from scratch. I tried to create a visceral sense of rhythm and speed in the animation, as I explored advanced body mechanics, and expression and character through dance. Influence has been taken from Ice Dance, Contemporary Dance, and Freestyle Slalom Rollerblading to find a unique personality in the movements.

Stuart Williams
The Interview

The research section of my final-year project was mainly focused on acting and the psychological study of human behaviour to form a believable character animation performance and therefore one that an audience can emotionally engage with. The work I am exhibiting is a 3D animation showreel featuring a diverse series of animation sequences and I have presented these clips as a singular narrative. It is intended to demonstrate the results of my research through the performances of the two main characters who are very distinct in personality and vying for the same job. One is self- confident, arrogant and forthright and the other is neurotic, undisciplined and has low self-esteem. The behaviour and body language of the characters will be derived from academic study of body language. I will include examples of dialogue, body mechanics, body language, quadruped animation, vehicle animation and non-verbal character interaction. I used free, existing rigs which I modified and referenced into Autodesk Maya.

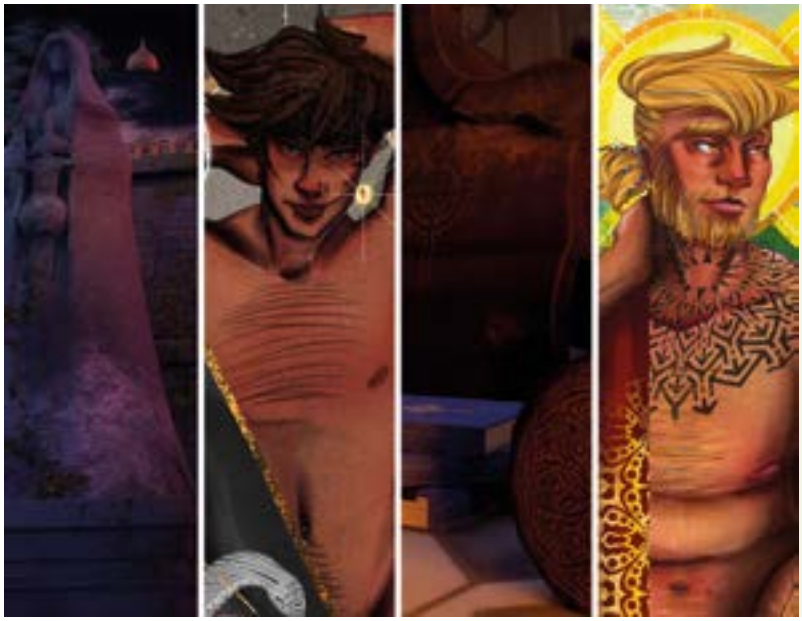
James John Macintosh
Man Hunt

Man Hunt is a 3D short film about a man who is being chased by wolves through a dark forest. To have the captivated audience within the realm of your story is, in my opinion, key to building an exciting animation. My intention was to build the audiences' suspense using only the character's performance until it finally disperses in its comical conclusion. This allowed me to focus on the details of what makes a good acting performance and develop my skills as an aspiring character animator. Improving on previously studied animation techniques and learning some new ones was key to the process of this film. Including wolves in this project gives me the opportunity to analyse both bipedal and quadrupedal body mechanics. I delved into a wide array of areas from acting emotions to pack hunting and wolf behaviours. This film was created with Autodesk Maya and rendered using the Renderman plugin. The compositing and editing of the film was completed with Adobe Premiere Pro and Adobe After Effects.

Stephanie Grace Davison

An Abnormal Situation

An Abnormal Situation focuses around a frozen-in-time dynamic shot of a mad scientist in the lab trying to deal with troublesome creatures of her own creation. The scene is comparable to a still frame from an animated film, with various camera movements to establish the environment, the characters and the narrative. The narrative is quite light-hearted, but contains slight morbid undertones that are conveyed through background elements and subtle suggestion. The environment reflects the main character and elaborates on her personality and history. All physical aspects of the piece, including a human character, a creature and an environment, have been created in a semi-realistic style; utilising a blend of stylised shapes and proportions with pseudo-realistic textures. Using raytracing software, I have built an effective and functional lighting setup; creative flair has been applied to draw attention to certain aspects of the shot. Concept sketches and design work have been compiled into an accompanying bible.



Rosemary Hawkes

Holygrounds

Holygrounds is a stylised 3D modelling, texturing and rendering project, with elements of story creation, character design and concept work. Holygrounds shows a scene from the larger story and universe it is set within. It's sundown in winter and the characters have decided to make camp within an old abandoned religious structure in an attempt to keep out the cold and the snow. Part of the roof has caved in, and the front doors won't fully close, but they've managed to find an area clear of debris and snow to set up their tents. I will be displaying a 3D walkthrough of the rendered scene, created using Autodesk Maya, Pixologic's ZBrush, Pixar's Renderman and other 3D packages, alongside a world building bible displaying relevant visual development work and additional concept work.

Michelle Turnbull

Triggered

Triggered is a 2D animated short film. It explores the theme of political correctness, and follows the character of the Social Justice Warrior as she tries to put an end to discrimination in a modern city. The aim was to get people questioning whether the recent surge of political correctness has gone too far. I targeted 17-25 year olds, because they are most likely to have a high awareness of political correctness. I wanted people to engage with it and not be afraid to form their own opinions at a time when differing opinions are feared. I took a metaphorical approach, with a cubist art style, to create something different that stood out and grabbed people's attention. The animation was done using Toon Boom Harmony 14.0 Advanced, with effects editing in Adobe After Effects CS6. Final composition took place in Adobe Premiere Pro CS6. Background art was created in a combination of Adobe Photoshop CS6 and Krita. I have refined my character animation skills and developed a better understanding of the storyboarding process. Additionally, I have gained new skills in editing effects and compositing.

Isla Charlotte Bousfield-Donohoe

Cocobolo

Cocobolo is a visual development project for an animated short film, based on the short story written by Ransom Riggs in his novella *Tales of the Peculiar*. As an aspiring visual development artist, I chose to create an animation pitch bible and a digital art-of document in order to expand my portfolio and help me to get pre-production work in the animation industry. The pitch bible includes a logline, premise, synopsis and outline, final character and environment designs as well as finished digital paintings of key moments in the story, to get the backing of potential clients to make the short film. The art of document shows the entire visual development process from research, to initial environment and character sketches to final designs. I drew the designs using pencil and paper, Adobe Photoshop and PaintstormStudio.

Matthew Aemilius Ruiz

DayBreak

DayBreak is a 2D animation about the fight between day and time as it is turned to night. Time is realised as a small, dark wielding character; the Daybreaker. Daytime fights furiously against the Daybreaker, but they both know there can only be one outcome in the end. Daybreak makes use of snappy, dynamic action and colourful effects based on eastern animation techniques. Designing creative, visually appealing characters and working them into an appealing narrative are skills that I have developed through this project. Daybreak was also a chance for me to explore my passion of 2D visual effects animation. Daybreak is a hand-drawn animation created in Toon Boom Harmony, with post-production and editing within Adobe After Effects and Adobe Premier.

Mark Anthony Wilson

Citroen DS3

My exhibit is shows my final year project, which is a short 3D-based animation, paying attention to modelling, rigging, texturing, cinematography and animation. I have created an animation that is shows off a vehicle and environment as if it were a professional television advert. I have been able to learn a variety of new skills and build upon pre-existing knowledge, such as my rigging skills, modelling, and animation skills. The software I have used are a mixture of Autodesk Maya, Adobe Photoshop, Adobe InDesign, Adobe Premier, 3D Coat, and The Foundry's NukeX.

Lia Ward

Pirate prosthetics

The project is a 2D animation showing my character animation and video editing skills. I would like to work in character animation in the future, particularly in 2D, so this is why I have chosen this kind of project. The story is about a group of pirates running into trouble on their quest for treasure. After being captured by the navy, they escape to discover an abandoned blacksmith that they used to make prosthetics for gold.

Eilidh Maccallum

Get Set

My short 3D animation is an action sequence in the form of a fight or chase with two characters and has allowed me to develop my animation skills through various aspects of animation including body mechanics, acting, interaction with props and the environment and interactions between more than one characters. While the focus of this project is the character animation, I also wanted to demonstrate other skills that are useful for a character animator. I have used existing character rigs, which I have altered by creating additional clothing and changing the textures so that they fit my film stylistically. I have also designed and modelled the environment, background assets and any necessary props myself. The characters interact with some elements of the environment so I have also rigged the background assets where necessary.

Tze Gwen Lee

Lyana's Story

I have created a 3D animation trailer about a teenage girl who is forced to kill a dragon that she befriended when she was young. It consists of both dialogue, body mechanics and creature animation. My main motivation for this project is my passion for animation. My inspiration came from movies and games like *How to Train Your Dragon* and *Drakengard 3*, especially when the main characters interact with the dragons. Through this project, I believe the hardest challenge for me was to animate a dragon with emotion, as well as create a trailer individually. Research did help a lot in ensuring that progress was made. My main software for 3D animation is Autodesk Maya, and I used Adobe After Effects for compositing. Adobe Photoshop and Audition was also used in the production.

Han Zerd Wong
Architectural visualisation

Architecture has always been an interest of mine. For my final year project, I decided to combine the skill sets and knowledge that I have learnt throughout my academic years with my personal interest. With that, I produced an architectural visualisation piece. This project was in conjunction with Foster & Partners, London. I was given the luxury of re-visualising their main studio and gallery space. Not only did I improve the aesthetics on the interior but also ensured that the designs are practical for their cause. My finished piece will allow the viewers to traverse through the buildings to observe the interior design. The main software of choice are Autodesk Maya and Unreal Engine 4.

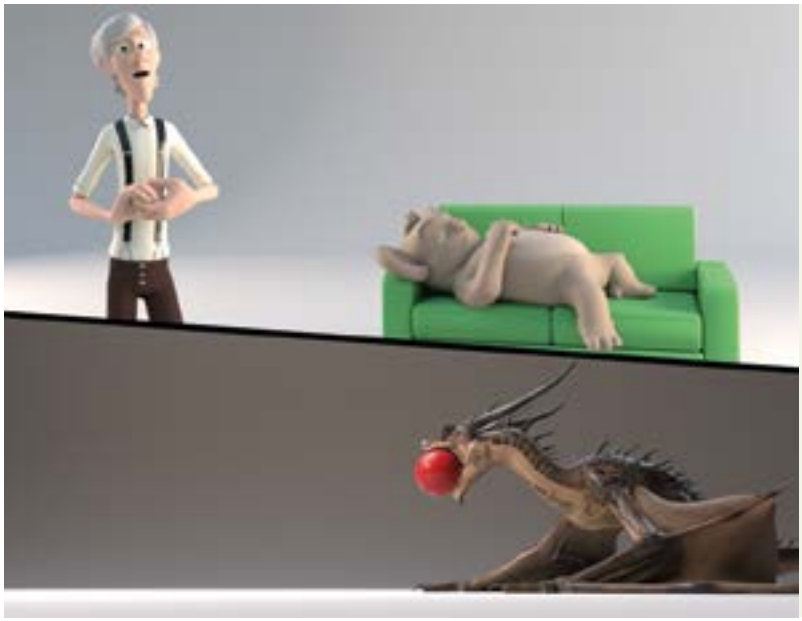
Ting Fui Yii
The Bus Stop

This is a 3D animated bus waiting scene which consists of multiple characters, varying in appearances and personalities. However, this is not an ordinary bus stop but a strange one where bizarre things can happen. Research about physical humour, acting techniques, personal space and body language were done to enhance this animation piece. Software used included Adobe Photoshop for pre-production, Maya for modelling and animation, Adobe Premier Pro and Adobe After Effect for compositing and editing and Adobe Audition for sound editing.

Natalie Lianne Chin
Me, Myself & I

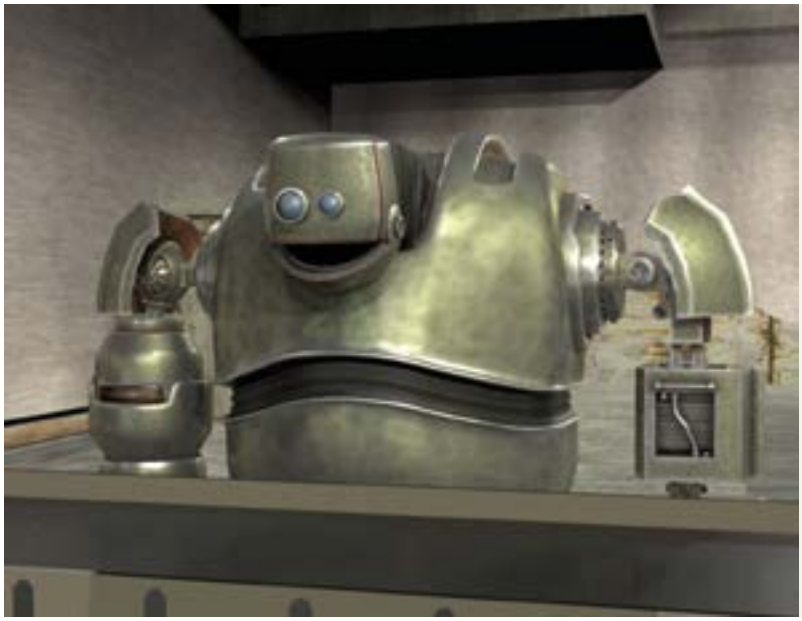
I have created a 3D animated sequence about a man who has to deal with personified guilt and redemption after the loss of his friends. The aim of this project is to create a story with strong acting performances from each character, since acting is an integral part of animation. Through this project, I have developed a deeper sense of understanding thinking in animation and acting choices through body language and facial expressions. I have used Adobe Photoshop, Autodesk Maya, Adobe After Effects and Adobe Premiere during this project.

BA (Hons) Computer Character Animation (with Foundation Year)



Daniel Atkinson
Hot Stuff

Hot Stuff is about exercising the 3D character animation skills I have acquired and to exhibit them in a professional setting. I wanted to push myself to create high-quality, polished animations that fully display my skill-set as an animator in the areas I enjoy the most. I aimed to produce industry-standard work. My first animation is a character lip sync, which presents a sturdy character performance. Some of the key aspects I had to consider for this piece were the characters acting performances, staging and how to represent that in 3D animation. In my second animation I pushed my talents in another area with a creature animation, more specifically an entertaining dragon animation. I researched facial animation, acting theory, creature locomotion/anatomy and cinematography. The tools I used to produce this project included Autodesk Maya, Adobe Photoshop and Adobe Premiere.



David Clements
Rusti and the mechanical animals

The pieces of work I have decided to exhibit are mainly modelling based and have a degree of rigging and animation to them but the main focus is on the modelling aspect of it. What it will showcase is my robot Rusti from my group work and a range of robot animals from my final year project

Eyitosan Elyon Billy-Ashogbon
Deadline

Inspired by several death games in fiction, I have chosen to do a primarily visual development piece about a young man who takes on a deadly game to rescue his sister. This will focus heavily on character and environmental design although there will be detailed 2D line tests included. This will hopefully display my skills in concept art, illustration and 2D animation. The end product will be a professional animation bible with an accompanying, fully rendered 2D animated scene done to a high standard. All initial and final designs will be created in Celsys' Clip Studio Paint and Adobe Photoshop. Line tests and animations will be created in Toon Boom Harmony.

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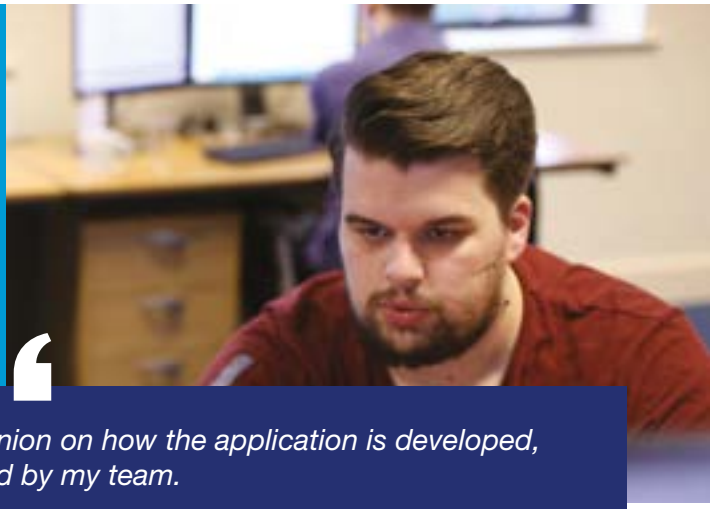
Mike Gray graduated in 2012 with a BSc (Hons) Software Development, which he studied at Teesside University. He secured a role as an ASP.NET Developer in 2016 at Trade Interchange, and is using the skills and knowledge he learned through his course in his career today.



I love that everyone has a voice and an opinion on how the application is developed, and I feel valued by my team.

University has definitely provided me with the skillset I need for this role and I am excited to see what the future holds.

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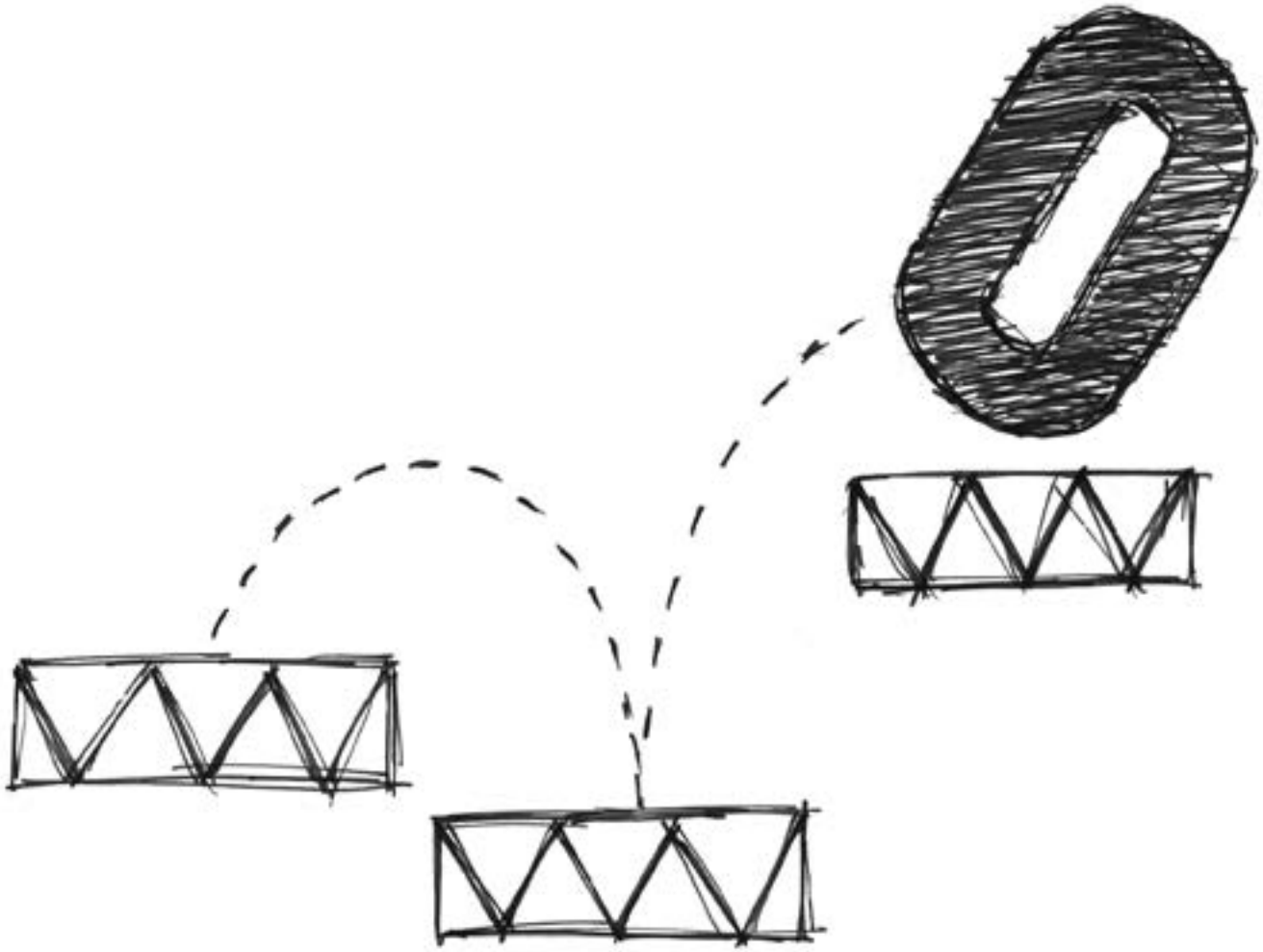
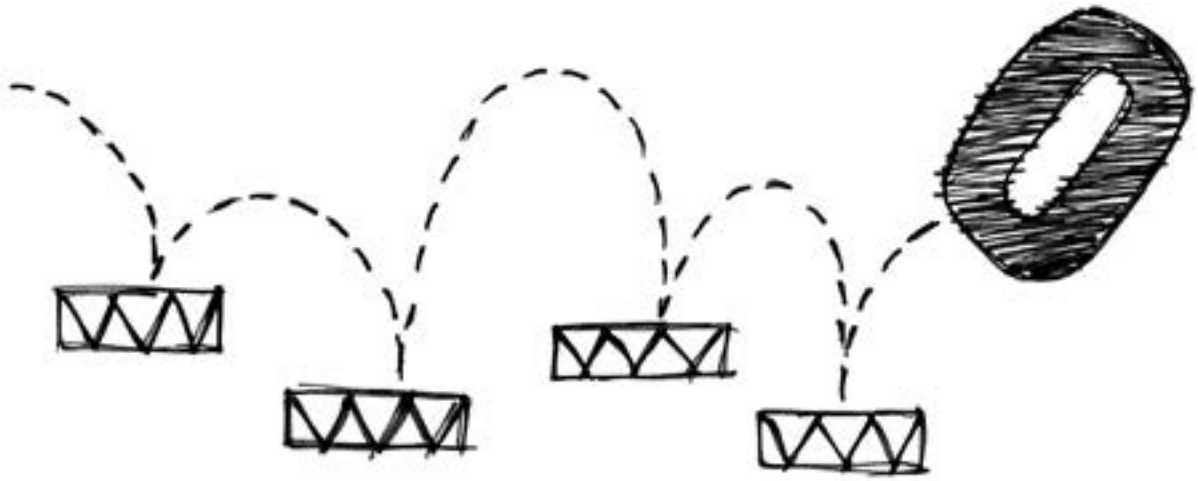


Games

The birth of a computer game is a complex and multifaceted process. Our students are able to refine their chosen skillsets through projects and team driven exercises, working alongside a variety of disciplines to create a fully functional, technically challenging and enjoyable game. Everything from initial concept art and visual development to distinctive gameplay mechanics and intricately programmed level designs are represented here at ExpoTees.

Our students bring ideas and creative flair from a diverse range of backgrounds and our graduates can be found at many leading games companies around the world.

We are proud that a number of our games courses are Skillset accredited. Additionally, our BSc (Hons) Computer Games Programming degree is also accredited by the British Computer Society.



The School of Computing is one of the best-equipped computing schools in the country with cutting edge hardware and software providing a world-class learning environment, and has outstanding facilities available to both undergraduate and postgraduate students.

Teesside University has invested heavily in the campus providing a range of specialist facilities to support teaching, training and research. The Curve, a flexible and innovative learning space at the heart of the campus was completed in the summer of 2015. The Campus Heart forms an iconic central focus to the campus and a vibrant, flexible and attractive environment for students, staff and the community.

Teesside University enjoys an excellent reputation in the exciting field of computer games. Our courses cover all aspects of games development. You can choose from courses designed for careers in computer games art, games design, games programming and concept art.

Our students have access to six dedicated games studios, a games lounge, and games programming studios, all providing a fantastic learning experience using state-of-the -art facilities. Students also gain real-world experience of the game development process by working in teams to produce playable game demos within a studio environment.

Undergraduate

- BA (Hons) Computer Games Art
- BA (Hons) Computer Games Design
- BA (Hons) Concept Art
- BA (Hons) Indie Games Development
- BSc (Hons) Computer Games Programming
- BSc (Hons) Technical Games Development
- MComp (Hons) Computer Games Design
- MComp (Hons) Computer Games Programming

Postgraduate

- MA Games Design*
- MA Concept Art for Games and Animation

*Subject to approval

Graduate Profile

David Garrett BA (Hons) Computer Games Art

I already knew I wanted to become an artist in the games industry and needed a few years to develop a portfolio good enough to get my first job.

I searched online to find games courses that were more specialised in the art side of game development. I found out about Teesside through its website and attended an open day where I spoke with one of the art tutors, and after seeing some past students work and where they worked after graduating I decided it was the best place to go.

The tutors were the best part of the course, they pushed me to make better artwork and made me step out of my comfort zone, which helped me develop the mindset needed to land a job in an extremely difficult industry to break into. The course provided me with the time and resources I needed to build the portfolio required to land my first job. My ability to work to deadlines, prioritise important tasks and work efficiently improved drastically throughout the course and has helped me considerably at work.

Currently I am a junior props artist at Foundry 42 (Cloud Imperium Games) working on Star citizen and Squadron 42. The job is fantastic and I work on many different styles of props in the game, which can range from hard surface sci fi pieces, to more organic assets in Zbrush and Marvellous Designer. I'm getting plenty of experience which allows me to continue to grow as an artist. The best part of the job is getting to make cool looking artwork that millions of players will see and interact with!

BA (Hons) Computer Games Animation

Katherine Duncan

Enhancing contemporary dance using 3D graphics and visual effects

This project delivers a creative dance using mixed media and techniques: Motion Capture, Visual Effects, 3D and Animation. I was inspired by Tobias Gremmler's Motion Work and works like *The Particle Man* by Peder Norrby . Alongside, I have done a lot of research into various materials such as video tutorials like Tobias Gremmler, BlackParasites, Visionary Universe, Colin Smith, Adobe Creative Suite, Oh god the slugs, Creativecow Books, Deconstructing the Elements, Mocap for Animators, and others.

Christopher Bromley

A glympse of a sinner

I have created A glympse of a sinner, which is an interactive horror VR experience. By using the latest Google Daydream VR technologies I have created a short horror experience within the VR environment. You start off at the doctor's who gives you the rundown of your recent eye transplant operation, after coming home to your apartment you begin to realize and uncover the truth behind your new set of eyeballs and where exactly they came from. Throughout this project, I have learned many new and interesting methods using a variety of software such as Epic Games Unreal Engine 4, Cortex Motion Capture, 3DS Max 2017, Adobe Creative Cloud, Android SDK, Daydream VR and much more.

Peter Michael Idziaszczyk

A study of facial animation and acting through animation

I have spent my time studying core animation and acting principles, to improve my skills as an animator. Starting my project from storyboards, I have created an animated short based from a 30 second audio clip. The character talks and reacts to those around them and the situation they find themselves in, expressing themselves through their expressions and movements. I focused my time on creating realistic facial animation that not only gives the appearance of believable lip-sync, but also conveys emotions that builds upon the characters actions in the short. I additionally studied acting and body movement to obtain a greater understanding on how the character could naturally move and react to their environment and situation throughout the animation. Using a premade rig I created all the animation, lighting and camera work within 3DS Max.

Qaisar Hussain

Controllable real-time adaptive and dynamic locomotive animation system

I have created a fully integrated animation set for a locomotion system for a character into the Unreal engine. The animation set has been created in accordance to industry-standard gameplay animations and is game ready with a realistic locomotion system with extenuated elements of exaggeration. I have created a test environment that will allow the user to trigger all of the animations in certain circumstances within gameplay scenarios. The character is fully controllable using an Xbox controller or the mouse and keyboard. The animations have been blended together to give them smooth transitions whilst maintaining uninterrupted gameplay. The entire animation set has been designed and created around gameplay considerations, which has given me invaluable experience working with gameplay animations and how these animations are different from cinematic animations. I have become better at technical animation and key frame animation.

Matthew Lake

Cinematic character animation

A cinematic trailer for a multiplayer orientated video game, the trailer focusses on displaying gameplay features from the video game in cinematic form. This piece was created for my final year project with all aspects of the animation pipeline utilised to complete this task - from rigging and skinning to motion capture and engine implementation. During the project I expanded my technical competencies in animation and cinematography. The animation was created within 3D Studio Max, rendered in the Unity game engine, with additional composition work in Adobe After Effects.

Luke Robson

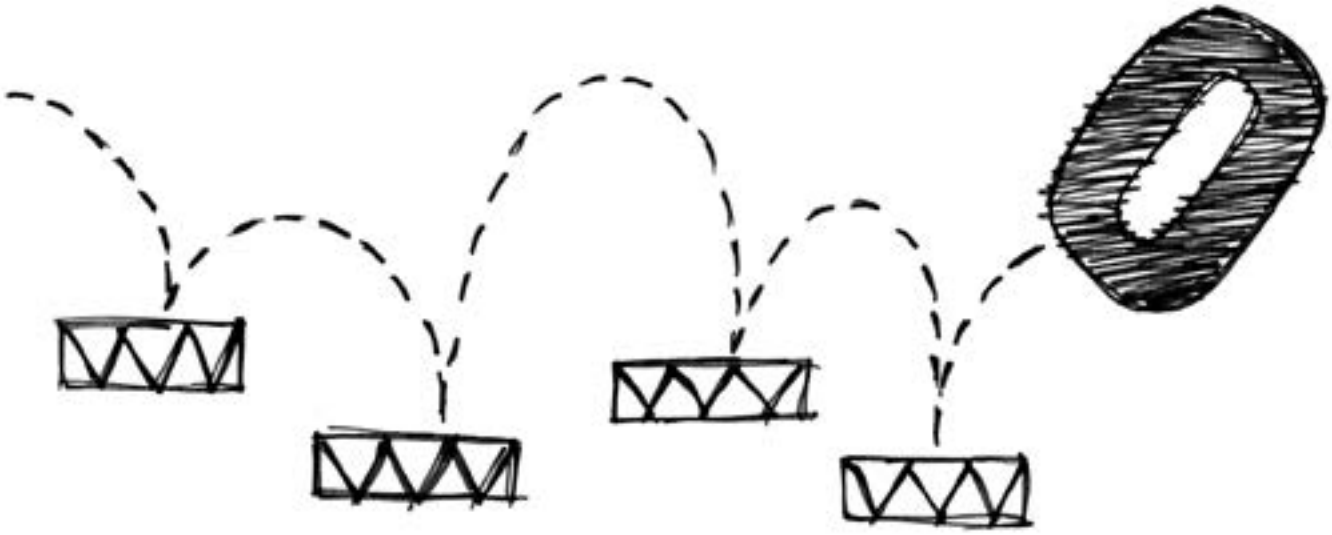
Robot workshop VR

I am presenting a short story in virtual reality. The narrative of the story can change depending upon where the user is looking in the experience, which takes advantage of the 360 degree viewing potential of VR. I have seen how VR development differs in comparison to regular game development, and how it affects the animated characters. The VR experience takes place in an abandoned workshop where only robots are left. I'm using sound cues and animation to direct the player's attention throughout the experience. I have improved my animation and rigging skills during this project. Furthermore, I have understood how to create a better user experience when interacting with digital characters.

Michael Crowther

Advanced motion capture retargeting

My project uses motion capture data of a human and re targeting it on to a non-human bipedal creature (based on A Murdoc from Blizzard's, World of Warcraft). The motion that I captured and retargeted is a selection of moves based from display mixed martial arts. My goal was to effectively retarget the data to a human character and a non-human character and staying true to the original captured motion. I wanted to challenge myself by pushing my limits of what I can do with motion capture data, and how it can be used. Most of this project was done in Autodesk Motion builder, but other software packages were used such as Motion Analysis Cortex and Autodesk 3DS MAX.



BA (Hons) Computer Games Animation (with Foundation Year)

Stephanie Hodges

Walkies

Walkies is a playful mini-game where the player is a dog out on a walk. My project focuses on the creation and implementation of interesting, high quality animations into the Unreal engine. I have created a range of animations, including animated actions for the character to interact with the scene of which they are in. My pipeline included getting appropriate meshes then rigging and skinning them before animating them by hand with key frames. The project was challenging and has given me a greater knowledge of Unreal Engine 4. I also have advanced on my animation skills and ability to produce quadruped motion. The two software packages used to create my project where, 3Ds Max and Unreal Engine 4.

BA (Hons) Computer Games Art

Charlie Pharis

March of the Eight-Span Crow

March of the Eight-Span Crow is a photo-realistic, 3D interactive experience, set in a large Japanese lake, as strange mechanical pagodas march through the water. This environment is built to focus on the contrast between traditional Japanese architecture and technology in a single, dramatic and aesthetic scenario. This environment not only conveys the beauty of the Japanese aesthetic, but lays out a series of narrative elements to let the viewers pick up on whatever they wish. The inspiration came to me as I walked through the old market streets of Shinjuku, Tokyo, with my tour guide telling me how the 2020 Olympics will possibly lead to the destruction of these iconic landmarks. This premise of the future overpowering the past, with technology, was a fascinating idea I wanted to explore further. The practical areas I have learnt from this project are focused in 3D environment art, lighting and narrative storytelling.

Matthew Selby

Hunter's Keep 3D recreation

The aim of my project was to bring the island of Hunter's Keep from its 2D origins in Sunless Sea, into a 3D perspective using Unity 5 and other 3D tools. I decided to stay close to the original style and feel of the original artwork, allowing myself to build my skills in painted and stylised texture creation, whilst keeping the 3D aspects realistic and detailed. I chose Hunter's Keep specifically as I felt it offered the most variation in the skills I could tackle, with both large areas of land and foliage coupled with buildings and man-made aspects. The project helped to develop my 3D and exterior environment skills whilst also working on shader creation, particle effects, plus terrain editing and sculpting. Software included Unity 5, 3Ds Max, Mudbox, and Photoshop.

Samantha Ponsonby

Artist's Abode

I am showcasing an Unreal Engine 4 environment, set in a bohemian-style living room. My work was inspired by Nathan Drake's beach house in the epilogue of Uncharted 4: A Thief's End. In keeping with the beach house's realism, I recreated this style in my scene. I researched and adopted the appropriate, current industry practices. This helped to advance my skills in high polygon modelling, physically based rendering and digital sculpting. Software such as ZBrush and Quixel Suite 2 also helped me to achieve the outcome I was aiming for. Creation of this environment was also useful for further developing my understanding of several other areas, including modular environment creation, lighting and environmental storytelling.

Jamie Scarth

1950's subway shelter

I have designed and created a unique 3d Unreal Engine 4 interior environment set after a nuclear war during 1950's America. I researched the 1950's cold war era America, concrete degradation, current industry practices as well as current hardware and software standards. A big focus of this environment was my focus on Substance Designer materials and having a procedural environment to keep up with modern industry techniques. I used 3Ds Max to model the assets and Zbrush to sculpt the more natural details. I textured my assets using Substance Painter alongside Substance Designer since this was detrimental to the procedural and malleable environment I wanted to create. This was a great opportunity for me as an artist to expand my talents and skillsets for future endeavours.

Chyle Vailoces

Warhammer fantasy: A journal of the Lizardmen Skinks

My final year project is based within a Warhammer fantasy setting. A renowned polymath of The Empire travels to Lustria to document whatever he can about the Lizardmen, in an illustrative journal he attempts to understand how they function physically. The journal also explores comparisons between the anatomy of a main skink type to humans, Kroxigors, Chameleon Skinks, dwarfs and goblins. I used Adobe Photoshop to create the journal pages, Adobe InDesign to put the digital work together, and torn physical pages of thumbnails, sketches and design work in the appendix taken from my personal sketchbook. My project produces concept art that other artists could use during production; if it was being sculpted and the sculptor needed a specific area of the body to refer to, I grew as an artist; I dived deep into herpetology, dinosaurs, general musculature and skeletal studies, whilst maintaining a sense of professionalism in the presentation of my work.

Adam Paul Harvey

Slave 1: The forgotten chapters

I have created my own version of Slave 1, Boba Fett's ship from the Star Wars Universe. After his death in the movies, the status of his ship becomes lost in the archives, which meant that I could create and imagine my own story for it. I created my own lore-friendly continuation of its story. My aim was to create a highly-detailed diorama of the ship, sporting a new colour scheme and physical upgrades, that would fit perfectly into the movies. I wanted to develop my skills as a hard-surface modeller. By choosing to make it so detailed and intricate, it allowed me to hone my skills as a 3D artist and learn new techniques for my texturing process. I have created the 3D model of Slave 1 using Autodesk 3DS Max and Zbrush, textured it with PBR materials using Substance Designer and Painter and presented it in Marmoset Toolbag 3 and the Unreal Engine.

Stephen David Hammond

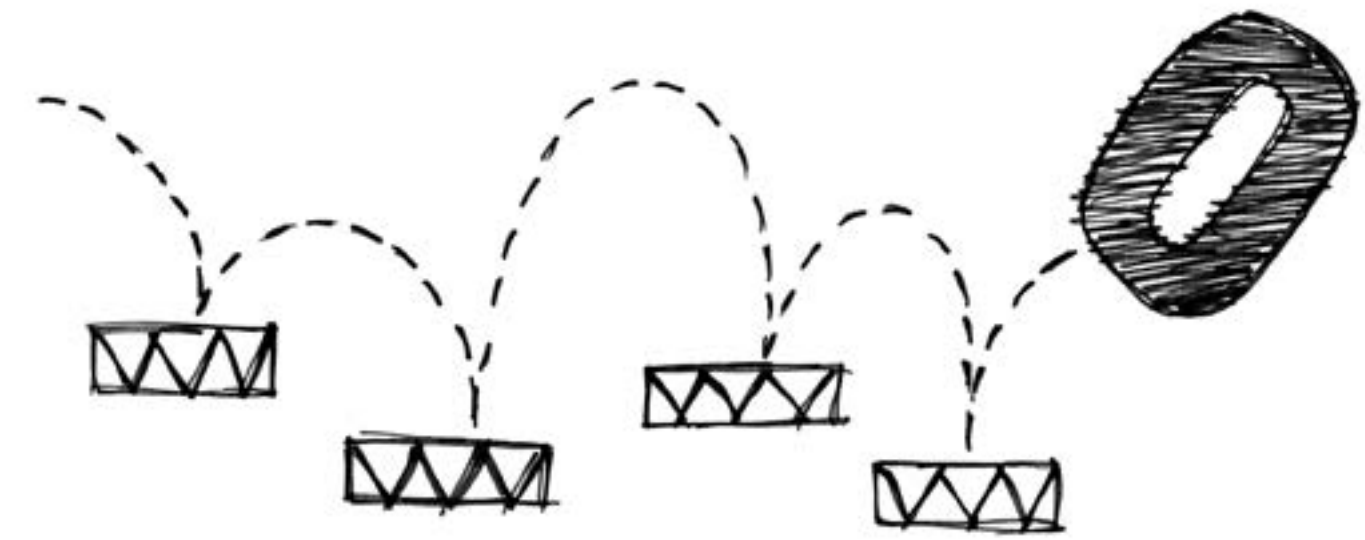
Model of the Harry Potter Gringotts Bank from Universal Studios in Orlando, Florida

I have always had a massive interest in grand, large scale environments and also Harry Potter, so this environment seemed to be the perfect project for me. My project was to recreate the real life Harry Potter Gringotts Bank which acts as the queue line into the Harry Potter and the Escape from Gringotts ride in Universal Studios. I used Epic Game's Unreal Engine 4 to construct the environment as well as light it. I worked with a range of software including Autodesk 3DS Max 2016, Quixel Suite 2.0, Topogun 2 and Adobe Photoshop CC 2017. During this project I worked to improve my skills in lighting and texturing as well as furthering my attention to detail. The project was tough but ultimately rewarding as I learned a large amount from it, which I will implement in my future projects.

Zack Parkinson

Abandoned Scottish manor

I am showcasing an Unreal Engine 4 environment set in an abandoned manor house. My work is based on the Kinlochmoidart house, a holiday home situated in the Highlands region of Scotland. I've developed a realistic style, taking inspiration from games such as Resident Evil 7 and The Last of Us. I used the latest industry practices and tools including physically based rendering, substance designer, texturing and digital sculpting in Zbrush. My piece incorporates intricate Georgian architectural details combined with the wear and deterioration expected of abandoned environments. This was a great opportunity to create contrasting moods and try something more ambitious than any of my previous projects.



Matthew Hussey

Lyra & Derven

My character is based on a concept by Carlos Ruiz. Lyra and her companion Derven are inspired by Blizzard Entertainment's Overwatch. Lyra and Derven are at a game-ready standard, meeting the character specifications and have topology suitable for animation. Additionally, I have given them skin variations. A player could unlock these character customisation options via a loot box in-game.

Production included research into the art-style and techniques used by Blizzard's character artists, which allowed me to sculpt high-poly models using a combination of ZBrush and 3DS Max, successfully capturing the features that define the Overwatch style. I used Topogun for retopology and Substance Painter 2 for baking. 3DCoat and Photoshop were used to create the hand-painted textures. Final renders are achieved with Keyshot, Marmoset Toolbag and Photoshop.

I have advanced my character production pipeline and become more proficient in sculpting, and I learned new techniques and developed skills with new software.

Red Izak Freeman

The Occultist's Residence

The Occultist's Residence is a real-time interior environment piece, set in the world of Arkane Studio's Dishonored 2. My main focus in this work was to improve upon my skills in asset production, environmental storytelling and in-engine lighting, while also developing and streamlining my environment production pipeline. All assets were produced using 3DS Max, Zbrush and Marvellous Designer, Materials and Texturing created in Substance Designer and Painter and implemented in Unreal Engine 4.

Elliot Doman

Realistic representation and render of a fictional studio apartment

My objective was to explore the world of an architectural visualiser, creating realistic 3D models, photo realistic renders/ textures and post production effects. I have created a fictional studio apartment which could be used to show potential clients what their dream apartment could look like. It's one thing to dream what you want, but being able to see it is a thing of beauty. The aim of this project was to not only making something look visually stunning, but to also show a range of skills and knowledge of various programmes using a full pipeline of software. Software used: 3DS Max and 3DS Mudbox for modelling and sculpting, Substance Painter for PBR textures, Marvelous designer for realistic cloth simulation, Corona Renderer for lighting and rendering, Adobe Photoshop and Sony Vegas for post-production.

Nikki Jane Meecham

Summoner: Creating a realistic creature from imagination

I have a background in fine art and concept art. My project is my own interpretation of the demon creatures from a book series called Summoner from Taran Matharu. I wanted to create realistic creatures from imagination and descriptions from the book to improve my sculpting and texturing quality.
I have experience using Zbrush and creating low poly models for in-game, but I have taken it to the next level and created a high poly sculpt with lots of detail in the sculpt and the textures. I have used Zbrush for the model, and Photoshop, Substance Painter and Zbrush for the texture. Before the modelling process I undertook animal and anatomy studies so I could create a believable creature. I have also made a development portfolio to show how my ideas have changed for the final model.

Charlotte Hughes

Robot workshop

Robot workshop is a game ready, photorealistic interior environment lit and rendered within Unreal Engine 4. The environment is based on my own concept art and depicts a small hobby workshop used for creating and repairing robots, I researched into real world workshops and the contents in order for the scene to be more realistic; I spent a lot of time working on lighting techniques; I used Substance Painter as my primary baking and texturing software as it allows me to use my PBR rough/metal workflow I have developed from researching into the different PBR workflows used by game industries. I wanted to make the scene game ready, therefore, I created the low poly assets in 3DS Max, using current industry guidelines for tri counts, and their high poly versions and baked them using Substance Painter.

Alistair David Mitchell

Robotic Fighting League – Environment Art

I have created a Robot Wars inspired Robot Battle Arena Environment. It is a 3D indoor environment that incorporates Will Hume, a game design student's, robot building / fighting game mechanics. The environment is in an Sci-Fi, industrialist and futuristic setting. The scene is constructed in the Unity engine and has functioning dynamic lighting, such as spotlights which are incorporated into gameplay, as well as a working, modelled broadcast-style camera which dictates the player's view of the game.

Rebecca Erin Fleming

Dishonored-inspired environment

My project is an interior environment inspired by the game Dishonored 2. It is a museum-like room, featuring the alternative, Victorian aesthetics that Dishonored is known for. I have always admired the art style of these games and wanted to challenge myself to replicate it in my own environment, and develop some of my own assets to fit into the Dishonored universe. This work showcases my artistic and technical skills, and has allowed me to develop my knowledge with techniques such as lighting and developing my own PBR materials through software such as Substance Designer. This project has given me the chance to apply a lot of the skills that I have developed over my time at university and showcase how I have progressed as an environment artist.

Bailey Imerson

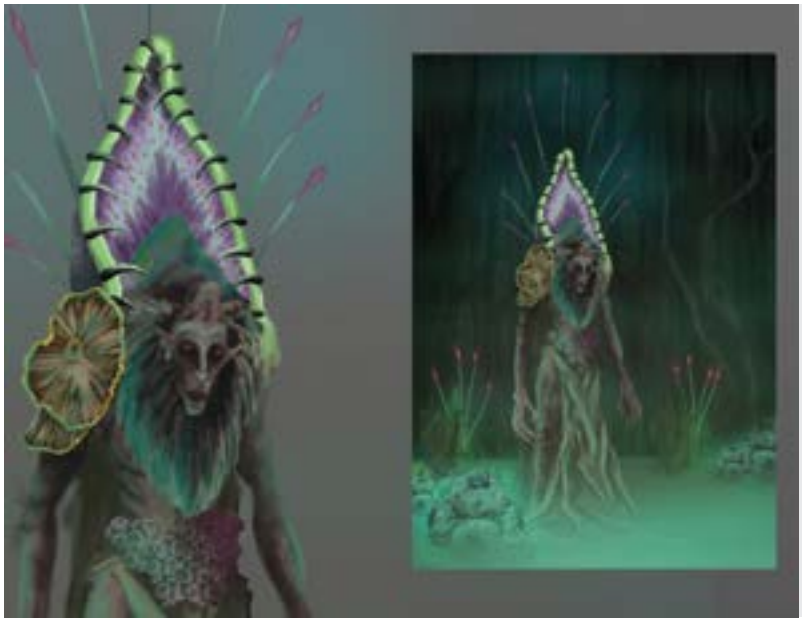
Artemis, The Hunt

For my project, Artemis, The Hut, I have taken an existing Greek goddess and redesigned her, adapting Disney's/ Pixar's art style using the knowledge and experience I've gained. The production included creating a series of concept, followed by a sculpted high poly model of this character, which could then be taken into an in-game cutscene or promotional art. The main aim of this project was to show my strengths as a concept artist as well as further develop my skills in digital character modelling, digital sculpting, physically based texturing, reference gathering and character production in addition this project has shown me how to maintain a balance between keeping stylised visuals and realistic anatomy. Using ZBrush and 3Ds Max to produce the character model and using Photoshop cs6 as my main tool for producing the concepts and textures.

Shauna Jade Hallway

Tuned to Dead Channel

What would happen if you started to blur the lines between virtual reality and our own? Imagine someone has trapped you inside your own head, with nothing but your sick and twisted fears as company. My project takes the form of an art book, which focuses on the main character Michael, a man who is forced against his will into virtual reality; and is trapped within his own mind, with no way out. The book showcases Michael's phobias, and I have represented each phobia as various disturbing creatures. The illustrations within are heavily inspired by cyberpunk, horror and bio-mechanical art, as I wanted to showcase my skills as a concept artist as well working in a style that compliments my artwork. I have also refined my abilities in digital painting, anatomy, perspective, colour theory, composition, creature designs, and developed my skills in project management and scheduling.



James Ian Gibson

An exploration of costuming within video game character design

The work I have chosen to exhibit is a series of conceptual designs focusing on the costuming of video game characters. In this exploration I focus upon aesthetics and functionality, drawing inspiration from numerous areas outside of the video games industry, such as theatre, film and fashion. The medium for my work is a combination of traditionally drawn and painted images for the majority of my pre-production work, and then focusing on creating my final pieces within Photoshop.

Stefan Ioan Oprisan

The Pharaoh's Tomb

My project is a re-creation of a level from Crystal Dynamics' Rise of the Tomb Raider. The level is a combination of traditional Lara Croft storyline and my interpretation of an ancient Egyptian environment. The level features a concealed Pharaoh's tomb within The Valley of the Kings, as well as clues to Lara Croft's disappearance. I used next gen workflows and software to create a highly detailed and eye-catching environment. Such software includes Maya and Zbrush, as well as Substance Designer/ Painter. The latter was used to generate realistic textures and maximum detail in the level. Until embarking on this project, I hadn't used Zbrush to sculpt. However, I now feel much more confident in my ability to not only use the software, but produce quality assets from it. I used Unreal Engine 4 to render my environment and have developed my skills even further, and am confident I will be able to apply such skills in a working environment post-university.

Thomas Meloni

Top of the food chain

I am exhibiting creatures I have created in a typical food chain model. I am showcasing creatures that are designed to be as realistic as possible using industry professionals' books and tips to make animals that look anatomically correct, biologically feasible and adapted to my chosen environment. I have developed my skills in anatomy, traditional and digital concept drawing, and sculpting with ZBrush.

Selina Peart-Pearson
XCOM 2: Inside the Avenger

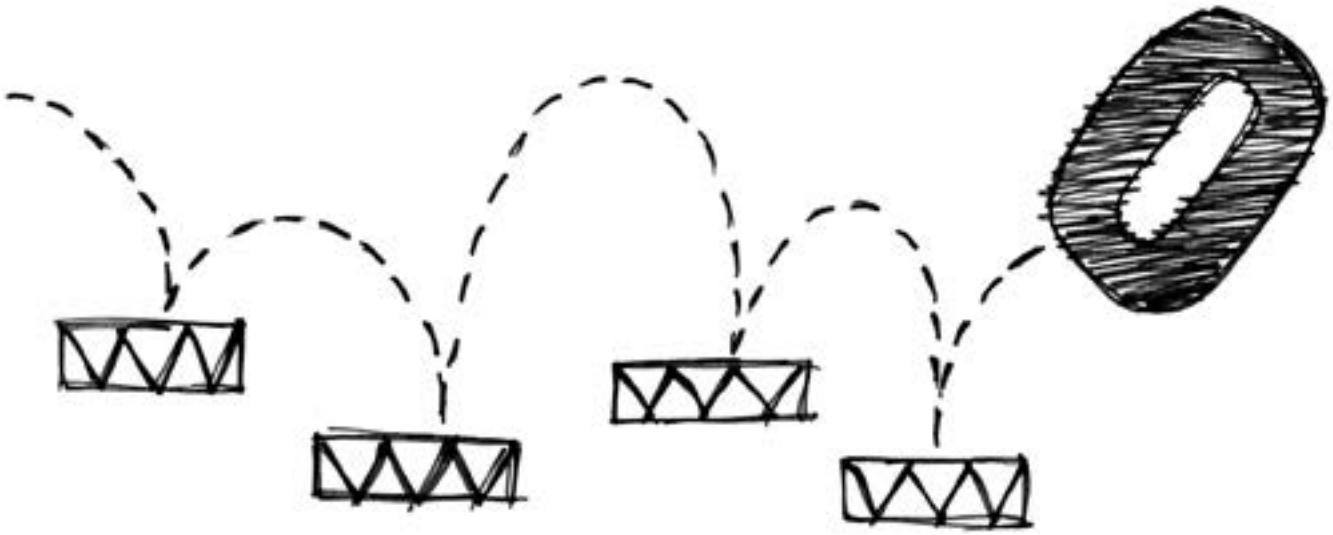
I have recreated the Avenger bridge from XCOM 2 inside Unreal Engine 4. The piece is based on a piece of concept art from the games art book. I used a current gen PBR workflow to create the environment and software such as Quixel Suite and Substance Designer to create high quality textures. This was my first project in which I created a full interior alone, so it helped me to learn skills such as lighting composition, working from a piece of concept art and advanced material creation. My goal was to recreate a version of the environment, which you could walk around and explore unlike in the game. I used 3DS Max, Photoshop, Quixel Suite and Substance Designer throughout the project.

Benjamin Evans
Innocent Universe

The Innocent Universe is home to many different types of worlds. It's a universe full of small planets that were inspired from different childhood games and activities such as creating a blanket and pillow fort or playing the floor is lava. A final finished game version of this project could have a player flying to these different planets to explore them. The world I have created is a pillow and blanket fort environment where everything is created from different cloths including even natural objects such as plants. The planet itself is very small, the player is able to walk around the entire surface and the gravity will rotate them round even upside down in the engines 3D space. The world was created in Unreal Engine 4.

Toba Ibrahim
The Nym project

In my first year at Teesside University I had no experience with 3D modelling and sculpting. Initially I wanted to be a concept artist, after being introduced to Zbrush in my first year I fell in love with it. Creating characters and learning new techniques has almost become an obsession for me. I always want to improve my craft and create new things. ExpoTees is a great platform for me to exhibit my talents and finally break out of my creative shell. The project consists of visually appealing and industry-standard characters. The characters are concepts from the great concept artist, Adam Lee. My goal was to do these concepts justice and bring them to life.



Richard Stokes

A walk through Dunkerstrad

In the town known as Dunkerstrad, just one walk down its hallowed streets and you will find a sense of character looming in the air. You could even say, you'll never want to leave! For my project I created a hyper realistic and historically accurate street, set in the Edwardian time period. I've also hidden clues to an underlining narrative inspired by the literary writings of H P Lovecraft. I wanted create a final product with some real depth. A single glance at my pre-rendered video will take you for a walk down one of Dunkerstad's tightly packed streets. However take the time to watch again and you'll quickly discover that there's a lot more going on than what first meets the eye. The software I am using to complete this project is 3DS Max, Zbrush, Photoshop, Quixel suite 2.0, Substance Designer, Substance Painter, and finally Unreal Engine 4.12.5.

Robert Anthony Daley

L A Noire: Private investigator's office

Using Unreal Engine 4 and other current tools, I have constructed the office of a Los Angeles based, 1940's private investigator as a 3D game environment in the style of 2011's L.A. Noire. I have developed and honed my skills in areas such as; lighting and scene composition, PBR material creation and texturing, high to low polygon modelling and baking techniques, reference gathering, sculpting and visual storytelling, among other skills. Using a variety of concept art, films and other sources, I have aimed to remain faithful to both the original game and the Film Noir art style. I have researched a variety of factors from period and location specific architecture and props, to industry standard pipelines and workflows, before applying this to my own industry experience. The environment was created using a combination of; Unreal Engine 4, 3DS Max, ZBrush, TopoGun 2, Substance Painter 2, Substance Designer 6, Marvelous Designer and Photoshop.

Billie Methven
The Violinist

For this project, it was my intention to create a game ready character. I designed, sculpted and optimised a character mesh of a male violinist. The character was designed to reflect the styles of the Victorian era, with visual inspiration being taken from the PS4 game, The Order: 1886. To create The Violinist I utilised a high to low poly workflow within Zbrush, to produce a final game ready asset. For the digital clothing production, I used Marvellous Designer to create the bases and then took the clothing into Zbrush for a high detail sculpt pass; to create more realistic results. The violinist, along with his violin, was textured with a combination of Zbrush, Substance Painter and Photoshop. The final renders were created with the Marmoset ToolBag, to showcase both the high poly sculpt and game ready asset.

Christopher Bunclark
Gundam

My final year project is an asset from the Gundam Franchise and used various pieces of software during its creation. The main goal was to create a hard surface model with the use of different techniques that I would not normally use, which is why the majority of the modelling was done within ZBrush and not in 3DS max. This allowed me to create complex shapes quickly which would have normally taken me longer. For my textures, I wanted to use the PBR pipeline so I created them with the use of substance painter to make them as realistic as possible. I used the Marmoset ToolBag software to create high-resolution renders of my finished model. I learned a lot during this project especially about sculpting software and the process used for creating hard surface models using a high poly workflow and am looking forward to using these skills in future projects.

Jamie Andrew Iceton
Systems online demo

I've created a small game demo for a game called Systems Online. I created the concept for the full game and the demo itself. I've learnt a lot about all aspects of game development over the project, ranging from UI development to animation to how to prepare assets to go in engine. Generally I feel that the project has really helped with all aspects of my skills and I'm proud of what I've created.

Justin Grace

The Imperial Boarding Party

The Imperial Boarding Party is a 3D recreation of a scene in the beginning of Star Wars: A New Hope and features two unique character models in an environment as a diorama. The skills I've developed in this piece are: character creation, 3D modelling and sculpting, texturing, PBR, high and low poly bakes, skinning and rigging and using Unreal Engine 4.

Jacob Mould

The Alchemist's Workshop VR

Virtual reality has become exceedingly popular over the last few years; with the release of consumer-grade headsets for both PCs and Consoles over 2016, we now see more developers and artists explore different visual ideas in virtual space. The Alchemist's Workshop VR is an immersive environment built from the ground up for room-scale VR. Inspired by VR demos such as The Secret Shop and Waltz of the Wizard, the player will explore a fantastical study, filled to the brim with strange apparatus, peculiar specimens, and ancient tomes. The aim of this project was to create an environment that focuses on atmosphere and immersion, while also incorporating a stylised, colourful art direction with bold asset designs and vivid textures. It is a fully 360 degree experience, allowing the player to explore every corner of the room.

Reuben Thomas

G.O.L.E.M. Workshop

I will be exhibiting a 3D game environment; modelled in Autodesk 3DS Max, textured using Allegorithmic Substance and presented in Epic Unreal Engine 4. The scene is a small, gritty workshop featuring the construction of a mech robot, set in a post-apocalyptic war-time inspired by works such as Valve's Half-Life 2. The goal of the project was to learn advanced substance texturing and material creation techniques, as well as further my technical and aesthetic 3D skillset with an emphasis on detailed environmental design and intricate mechanical modelling.

Aaron Wilfred Gash

Children of the King

Children of the King, consists of various characters from Greek mythology: Kronos, the King of the Titans and his various children. This final year project was created to challenge and improve my character production pipeline as well as my ability to keep a consistent art style across all characters. Through the use of Zbrush, other current software and my knowledge of Greek mythology, My goal was to create a number of characters for use within a video game, containing effective topology for animation and making use of PBR textures and materials. Following the high to low poly pipeline for asset creation, I started by creating high poly sculpts inside Zbrush which were then retopologised with Topogun. Various model details were baked using XNormal and any issues were amended in Photoshop.

Jack Bailey

Forest clearing camp

I created a wild campsite scene set in a mountainous forest in North Wales. The scene was created in Unreal Engine 4 and I used a wide variety of software such as 3DS Max, Substance, SpeedTree and ZBrush to create assets. The reason I chose to create this scene was that it gave me the opportunity to develop and broaden my skillset with a lot of tools and pipelines that I was less familiar with.

Miguel Pedro M F Cortez Ribeiro

Ferrari Testarossa in Assetto Corsa

For my final year project I wanted to model the 1986 Ferrari Testarossa, one of the most iconic supercars in the history of the automotive industry. However I didn't want to stop there, as a bit of a petrol head I know that beautiful works of engineering and design like this one aren't solely meant to be looked at but to be driven. To convey the experience of this vehicle in its fullest I modelled it into Assetto Corsa, one of the best racing simulators out there. This project's purpose was to show my current skill level as a hard-surface modeller, as well as my ability to learn and adapt to a game engine, using it to showcase my work and communicate it in an interactive way.

Jason Andrew Williams

Lost Jessie: Developing character art in Sprite and 3D

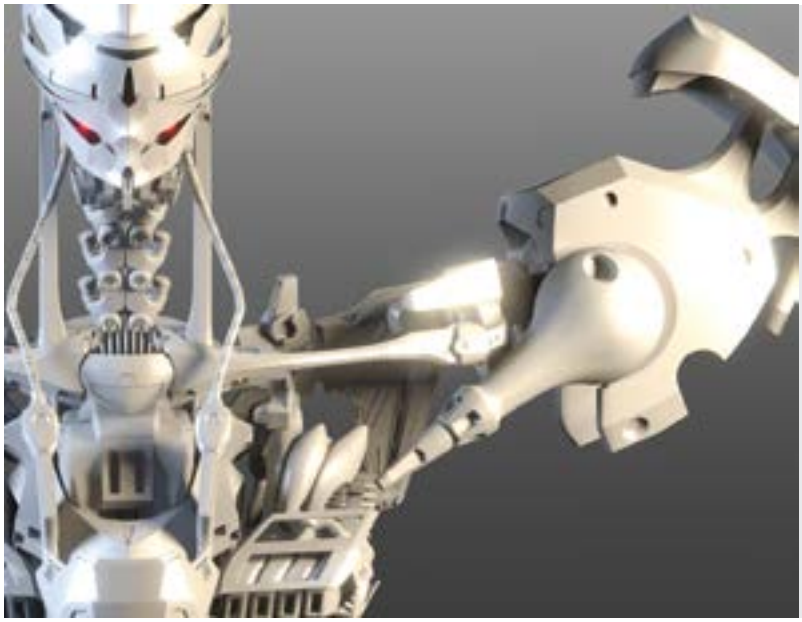
I have created and developed character art for both 2D and 3D platforms. There have been many game characters that have made the transition from Sprite-based platforms such as such as Mario and Sonic, and with the development of 3D technology have been able to become more dynamic and immerse in their respective IPs. My intention was to concept a stylised fictional character for a non-existent game (preferably a protagonist) and use that as a basis to create 2D sprites, a 3D version of that character for in-game, a high-poly sculpt of that character for presentation or marketing purposes and finally a 3D printed version. The main aim was to develop all aspects of character art from initial design all the way through to final product.

I have implemented multi-player up to five players, which has been a feature enjoyed at events such as GameBox and Game Bridge.

Agustina Belen Tonon

Meet Uzgus

In this project I present my own 3D character, from my own concept design, based on an anthropomorphic wolf form of myself. My character goes through all of the artistic phases from concept, 3D mesh, high res, low res, texture, fur development, rig, skin, pose and animation. The character portrays my personality through my hobbies and interests. The final result is a short video showing this animated cartoon character and a 3D printed model.



Raul Caballero

Vehicle assembly building

I am showcasing an Unreal Engine 4 sci-fi environment set in a robot maintenance and repair facility. The title of this project is a tribute to NASA's iconic Vehicle Assembly Building (VAB). For the robot, I have used the designs of LED. Mirage by Mamoru Nagano. For my modular sci-fi set, I was inspired by the works of Tor Frick and Paul Pepera. I wanted to focus this project on hard surface modelling and develop my skills in high polygon modelling, physically based rendering and creation of procedural materials. At the same time, the project was a good opportunity to embark on a more ambitious personal endeavouring this project I used the following software: 3Ds Max, Fusion 360, ZBrush, Substance Designer, Substance Painter, Quixel SUITE and Unreal Engine 4.

Andrea Fayos Molto

Yokai

I created a series of illustrations and their process behind. I set my topic into feudal Japan and I have chosen a range of different emblematic characters from the era, mythological creatures and mystical environments that I created within the given time. To do this, I followed the industry standards when creating art for video games and I accomplished a professional result in the end. When the art was created I assembled all the work done into an Artbook as if it was created for a live game. By completing this project I was able to obtain more experience in the art field I am interested in, concept art. I also learnt the actual format to present and develop concept art in the industry and this gave me the chance to explore new painting techniques and art styles that I will utilise in the future. Artstation: https://andreafayos.artstation.com/

Anais Gamez Martin

Realistic tiger

For my final year project, I made a realistic tiger with dynamic hair. Also, it is textured and it has a simple idle animation. The tiger is placed in a simple scene in the engine, where it is possible to see the idle animation. Also, you are able to see the dynamic hair reacting to the environment and the tiger movement. The scene where the tiger will be shown is based on an Indian jungle.

Jorge Hernandis Sanz

The interiors of the Millennium Falcon

For this project I built the interior of the Millennium Falcon, the most accurate possible. I modelled, textured, and built the environment on engine. The project focusses on the main and most famous rooms like the cockpit and the main room where the chess table is. I have textured it using PBR to achieve a realistic view and style. It is built in Unreal Engine 4 and you can walk around the entire environment in a first-person view. I have also added some interactive actions.

Jaume Rodriguez Peralta

Jellyfish fairy

The project is a 3D piece of artwork involving a video game character protagonist in a fantasy cartoon style. The final project reflects a polished, finessed piece of artwork in 3D for video games. The focus of the project is on recreating the concept art of (Birduyen, n.d.) to show I have the necessary skills to transform someone's 2D artwork into functional 3D meshes for video games being as close as possible to the original work and my research question is be: Am I capable of creating 3D characters starting from a concept art I haven't drawn in a professional way?

Martin Mariezcurrena Alcasena

Goddess Temple

I am showcasing an environment of an Asian temple set on a little island. It is a building created by ancient gods in which lies a spiritual breach. This was created with the purpose of contacting the gods when a disaster is coming. The artistic style is based on Overwatch and The legend of Zelda: Breath of the Wild videogames. The use of hand painting textures combined with PBR workflow has impressive looking results. I have used this project to improve my skills of sculpting and painting as well as learn about Unreal Engine 4 in terms of rendering.

Jon Ander Iglesias Yubero

The Templar Knight

I have developed a 3D character using different software tools. As a games art student, I am interested in the whole workflow of 3D character design. I have researched fields that I barely know about to improve my workflow and have adapted as much as I can to the video game industry. The main part of the project is a Templar knight holding a sword above an environment. The model was developed in high resolution and then in low resolution. Another part of the project is the documentation of the work progress.

Matias De Miguel Echarte

Frederick's graveyard

I have been creating an environment based on Bloodbornes lore which could be part of the rumoured Bloodborne sequel. I have been using Unreal Engoine 4 as Graphic engine, and researching Bloodborne and Darksouls games because both have similarities and came from the same developer.
I used Substance Painter 2 and Substance Designer 5 for the texturing tasks. This project helped me to improve my texturing skills in Substance Painter 2 and to learn more about Unreal Engine 4 and Substance Designer, This was a great chance for me to attempt something bigger and to widen your knowledge.

David Garces

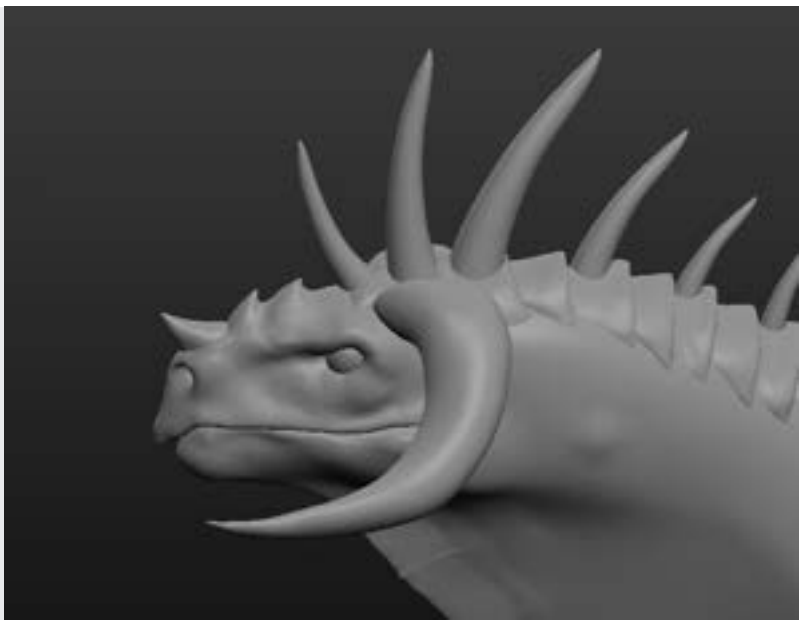
The chaos warrior

For my project I produced a 3D character based on the chaos knights of Warhammer and the style of Dark Souls saga. I did this because I would like to be a character artist and be involved in a fantasy game with this character. To model it I used 3Ds Max, Zbrush and Marvelous Designer, Substance Painter and Photoshop to create the textures.

Christian Johnsen

Onyxia recreated

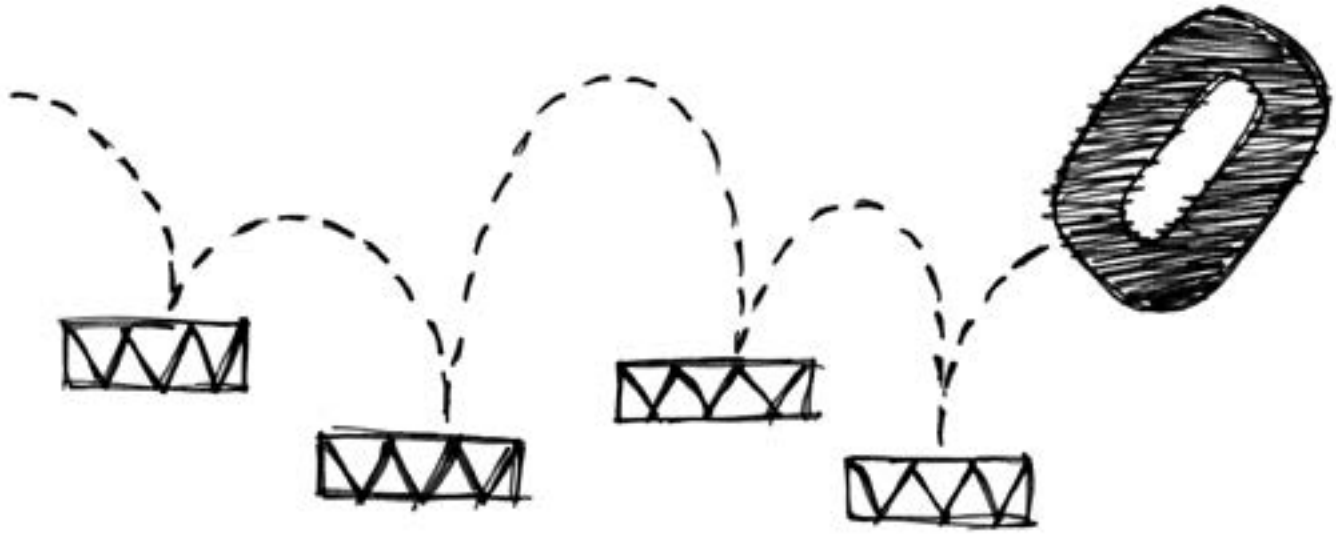
I have recreated the dragon Onyxia from World of Warcraft. I wanted to make a more realistic version with higher poly and better texture. I have fully modelled, textured, posed and high poly sculpt, and a low poly version that is usable in a game engine and can be 3D printed.



Kristoffer Stevik

Extending Overwatch

Inspired by the artwork done by concept artists at Blizzard, I have researched and made potential concept art for future Overwatch maps. The maps are inspired by different continents of the world, to showcase a wide variety of moods, and show my interpretation of how the story has affected the areas.



BA (Hons) Computer Games Art (with Foundation Year)

Reece Whittingham

Lucy's Diner

I have created a small 3D environment based on a retro 1950's American diner that follows a horror theme. The environment features a lot of open-ended environmental storytelling and embedded narrative in order to create a detailed and interesting scene. Lighting is an integral part of the environment in order to build suspense and add atmosphere. This project allowed me to further my skills in areas such as lighting which before now I had only touched on. It also gave me a strong portfolio piece that showcases my skills and my knowledge of the whole pipeline process of creating an environment. I intended for this environment to be part of a video game, which meant I had to pay attention to tri count and texture size to make sure it would run smoothly in the engine. I created the entire environment using 3Ds max for model creation, Substance Designer/Painter for texturing and Unreal Engine for the final product.

Samuel James Carey

Tribal priestess

I have fully developed a character complete with props, from design to final model, which would be usable within a game. The character is heavily-based on Aztec and Mayan culture incorporating things like jewellery, furs and exotic headdresses. This project allowed me to develop skills in areas such as subsurface scattering, sculpting and complex materials such as fur. I achieved this by using a variety of software such as Unreal Engine 4, Substance painter and Mudbox.

Kristina Volo

LEGO Thunderbirds

I have created a cinematic trailer for a LEGO Thunderbirds game. The trailer takes key moments from the original 1965 Supermarionation opening sequence such as the opening count down, and combines it with recreated shots from episodes and films of my own choosing, such as the crash of Thunderbird 2. The creation of my project allowed me to develop my skills in VFX, modular asset creation, lighting, rigging, skinning and animating, as well as provided me with the incentive to learn the implementation of animations in Unreal and video creation. My project was created with a suite of tools including 3Ds Max, Adobe Photoshop, Adobe Premier, LEGO Digital Designer, NVidia Apex PhysX Lab and Unreal Engine 4. This project was the perfect opportunity to continue and develop my second year module, Creative Portfolio Development.

Ryan Jones

Sacred geometry: A workflow exploration project

I wanted to specifically learn new workflows and challenge myself so that I could grow further as an artist. I created a 3D environment diorama of a temple or tomb that would act as a level selection hub in a video game. My other project aim was to specifically research and implement the use of mesh sculpting and the Unreal Engine's particle effect system. World of Warcraft: Legion and Darksiders 2 were major reference sources for architecture, art style and workflows, especially in regards to my planned research areas and in designing my own assets correctly. The programs explored during the course of the project include 3DS Max for 3D model creation, ZBrush for asset sculpting, Adobe Photoshop, Substance Painter and Substance Designer for asset texturing. Along with the Unreal Engine 4 for implementation, set dressing, lighting and post processing, and Marmoset Toolbag 2, for rendered asset stills along with Adobe Premiere Pro for the trailer creation.

Molly Catherine Entwistle

What happened at Black Crystal Cabin?

This is an Unreal Engine 4 environment I have developed. Set in the 1980s, it takes place directly after the disappearance of a small town police officer from a remote cabin, which is central to a spate of missing persons cases, and reports of strange lights in the sky. Over this project, I have developed my skills in creating a realistic art style, PBR texturing in Quixel suite, creating atmosphere through lighting and effects, and digital sculpting in Mudbox. This project has provided me with a valuable opportunity to try something more ambitious in scale and learn new skills, as well as improve on the abilities I already have. As an avid fan of the horror genre, I have enjoyed working on a project with this theme.

Joel Burton

Silvershire town

I have produced a 3D environment in Unreal Engine. Loosely drawing inspiration from the World of Warcraft town of Goldshire, as well as the artwork of Michael Vicente, and David Harrington. I have chosen to produce this for the purpose of developing stylised texturing, modelling and sculpting techniques. The environment is a market town created from my own concept art. This project has grown my skills in scene composition, lighting, and asset creation, and has really taught me a lot on how to construct a stylised world.

Jake Evans

Écorché of the average male

My aspiration is to be a successful character artist, so my project was to study in depth the anatomical intricacies of the human body, and create them myself digitally. This creation is called an écorché. This tried and tested method of stripping away our skin layers has been used for centuries by students around the world. Those who study gain deeper knowledge of our bodies, allowing them to create more believable drawings and sculpture. Therefore I regard the practice of creating an écorché fundamental to achieving my goal. I have chosen to build my model piece by piece using Pixologic's Zbrush as it's the best software package for digitally sculpting. Its power and non-destructive way of creating 3D models has led to its continued widespread use throughout the entertainment industry, making it a great tool of choice for my project.

Robert Lee William Ellis

Peaky Blinders pub recreation

I have created an interior 3D environment featuring the Edwardian pub featured in the TV show *Peaky Blinders*. This shows that I can recreate a scene from reference for use within a video game. When selecting an environment to create I wanted something iconic and recognisable as many games feature memorable locations for their settings, in this case a traditional English pub. Through the creation of this environment I hope I have shown that I can work to a high standard by demonstrating my current skill set and reinforcing my current knowledge. The setting also allows much room for polish and secondary features but the primary focus was to make the environment match the source material and be aesthetically appealing. It further shows a range of skills such as hard surface modelling, organic modelling, traditional and PBR texturing, in engine implementation and the ability to organise my workflow efficiently.

Thomas William Rees Woolley

Ruined Roman villa

I created a realistic scene of a ruined Roman villa in Unreal Engine 4. The scene is set in 490 AD at the fall of the western Roman empire. The villa has been attacked long ago and left in ruin, and in this time nature has started to reclaim the area. Taking inspiration from games like Ryse Son of Rome and The Last of Us. I used a standard PBR metal/roughness workflow. Some of the software I used includes Photoshop, 3ds max, ZBrush, Substance Painter, Substance Designer and Marvellous Designer. My aim with this project was to improve my understanding of lighting and atmosphere while pushing my ability as a 3D artist. www.artstation.com/artist/twoolley

Thomas Rae Beckensall

New Terra

I decided to show my talent across multiple areas of study, both in 2D and 3D, by working my way through the pipeline starting with concept art and ended with a playable level. I was inspired to do this by a previous concept and developed it from there. I created a playable character model, fully rigged, along with a detailed environment to explore and interact with. I built this game demo's assets using a PBR pipeline and modern creation techniques. I take joy in all aspects of world building and have created this in-depth environment with care. My skillset varies across many areas in the development of this project and I feel I have shown this by developing my own game demo from my original concept.

Paul Wilkinson

Red Dead Redemption: HD saloon remake

I have recreated the interior of the iconic saloon from the game Red Dead Redemption (Rockstar San Diego, 2010) within the Unreal Engine (Epic Games, 2017). The scene encompasses the main area of the lifeblood of any good saloon, the bar and also features a second tier where the patrons of the saloon may rent a room for the night. I believe that the lighting of such an environment is key and that is why I have focussed a lot of attention on this aspect to add atmosphere and to bring the scene to life. I have advanced my knowledge with lighting within Unreal Engine and have learned cinematic lighting techniques to add strength to my work. I have also furthered my understanding of the pipeline using new software such as Substance Painter and Substance Designer and how to include those in the workflow and worked on a style/theme that I have not previously created an environment for. My portfolio: https://sirpaulus.artstation.com

Damien Grant

Psion

I have created a fully rigged, game-ready character that is placed within a small scene in Unreal Engine 4. The character was the main focus, allowing me to improve and showcase my sculpting abilities and texture something with a higher level of detail than was allowed in other projects. The personal aesthetic of the player is an important thing, it can allow for a more personal connection or varied experience; I wanted to experiment with this by exploring basic customization. I wanted my world to be somewhat stylised while retaining the detail of a more photo-realistic piece. I used Zbrush for character sculpt and high detail passes, 3Ds Max for modelling environmental assets and props, I textured all of my assets in substance Painter 2 and finally everything was brought together inside of UE4.

Perry Senior

Mars research base

I have created a game environment for a science fiction game set on the Martian surface. The focus of my environment is the interior of the habitation module on a near future Nasa scientific research base on Mars. For the style and design, I was heavily inspired by the art direction of the Ridley Scott movie; The Martian. I have done my own interpretation of the Hab from the movie, as well as taking a lot of inspiration from the original novel and source material by Andy Weir. Portfolio - https://nyveria.artstation.com/Artstation - https://www.artstation.com/artist/nyveria

John Kavanagh

Dia De Los Muertos

I have created a stylised environment based in a small Mexican town during Day of the Dead. I chose this because I wanted to advance my skills in stylised asset creation. I have used vibrant colour schemes in an effort to really capture the unique aesthetic of the Day of the Dead festival. Through this project, I have improved my skills in environment building, lighting, and asset creation.

BA (Hons) Computer Games Design

Haydn David

The Hike

The Hike is a short, narrative-based, first person experience that metaphorically depicts depression. The narrative is told through environmental storytelling, with narration in the form of developer's commentary. (done by myself, influenced by The Beginners Guide) In producing this work I have developed skills in Level Building, Narrative Development, Sound Recording and implementation. I have also become more proficient with Unreal Engine 4 blueprinting.

Annabel Marion Ting Ai Osborn

I want to be a witch! Bridging the gap between traditional story time and games for children

My piece demonstrates how the games industry and books for children can merge together to create a stimulating, digital interactive experience for young readers. With more and more young readers gaining access to technology at an early age, exciting and educational content needs to be produced. I have written my own story which follows a young otter's journey and trials to become a witch, filled with illustrations, interactions and mini games to keep the reader engaged. The project uses Unity engine and C# scripting for all the game play and interactions, and the illustrations are hand drawn by myself in Photoshop.
I have developed my game development and scripting, illustration and Sprite sheet animation skills as well as story writing, pre-production and design capabilities.

John Taggart

The dangerous journey

This is a fantasy RPG complete with a fully functional user interface, combat system and a high concept main menu. It's a single player game in which the player explores the environment in the hope of completing the quest by vanquishing their enemies in a turn-based combat scenario. There is an overarching quest line that the player can complete, telling a story in the short time they play the game. The main menu was created by implementing a real life actor flipping through the pages of a book as the player navigates through the main menu. This was inspired by the main menu interface created in Brutal Legend. I used Unreal Engine 4 and created the game using blueprints. I additionally used Adobe Mixamo and Fuse for my character assets and animations. For the audio editing I used Audacity and for the video editing for the main menu I used Adobe Premiere.

Dean Graeme Hillary

Churches - a first person survival game

Churches is a first-person survival game, aimed at introducing a morality system that will try to persuade players to reduce the kill on site factor that so many of these games in this genre seem to overlook. I have built all the blueprints myself from the ground up using common and new mechanics to try and create a realistic and immersive experience. I have also created a map for players to roam around and try out the game. I used Unreal Engine 4 to create my project as I have come to really enjoy using blueprints during previous assignments, I really wanted to get stuck in and further my knowledge with them. UI was another area I was very fond of and have also created my own interfaces for this project. From main menus to in-game widgets giving players a lot of variation when it comes to gameplay.

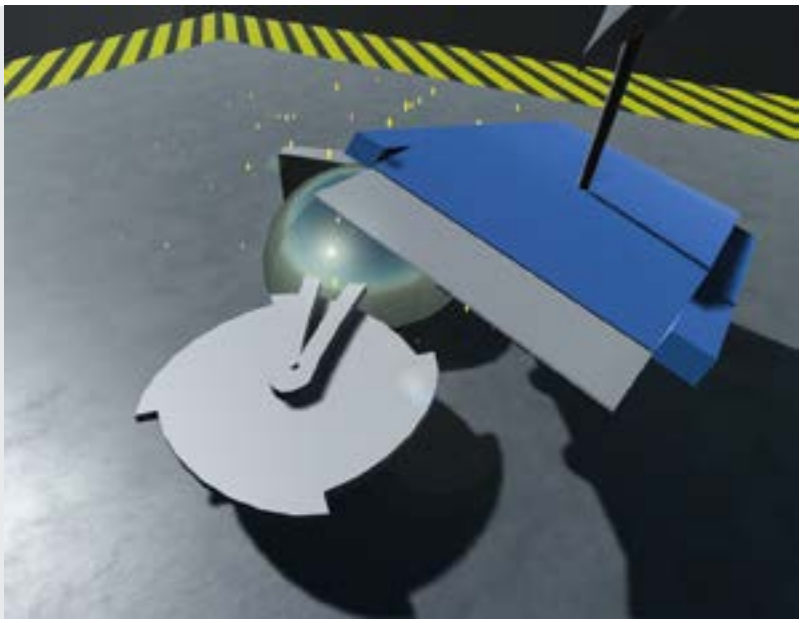
Kieran Fay

Bonus Battleborn

I created a level layout following the format of the gearbox game Battleborn using art assets from sourced asset packs online. It is a fully playable environment with enemies and my own created character with two main abilities. As well as the character, the enemies and the environment there are also other small features created and implemented. Chests which follow the same principle as the ones in Battleborn, spawning a selection of power ups provided to the character which are randomly selected from a pool of power ups or beneficiaries to the player. The character follows the same style that is seen in Gearbox's games Battleborn and Borderlands, where the character harnesses the ability of a traditional first person shooter character whilst also having the capability to use abilities to help or hinder the enemy. My characters all have their own set method of attacking without their abilities whether that is a melee form or using ranged weapons. The project was created primarily in Unreal Engine 4, with other programs such as Adobe Photoshop and 3Ds Max assisting specific areas.

William Hume
Robotic fighting league

I created a physics based battle game in Unity. The Robotic fighting league allows players to create their own robot and battle against friends in local multiplayer, a similar layout to the popular TV show Robot Wars. Each player chooses and controls their robot during the battle. To win players must immobilise the other robots and be the last robot standing. Battles are also timed, with the arena getting smaller if the fight takes too long. Approaching it from the angle of a party game allowed me to focus on making the gameplay fun and balanced, with the key being to keep it simple and intuitive. I created the game using the Unity engine, I did the design work and base programming myself but also used plugins including G2U. This plugin allowed me to load all my stats from Excel. This was incredibly useful during the balancing processes and for tweaking the robots.



Devon Jade Granger
Into the light

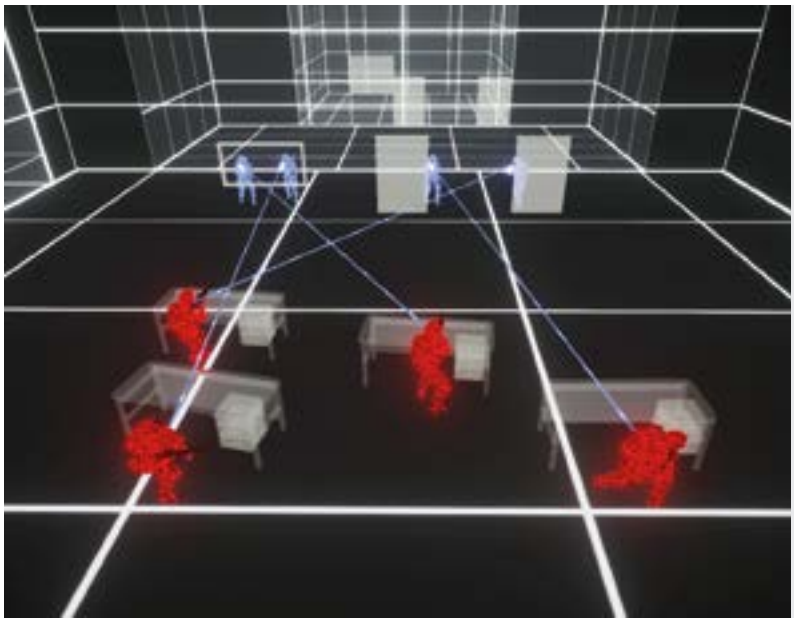
My project, Into the light demonstrates my knowledge of lighting and real-time rendering within a small in game scene I have created. Other areas I have demonstrated are lighting theory, lighting pipelines, along with lighting and 3D rendering techniques. However as well as this I will be showcasing my knowledge of level design with attention to detail of architectural structure, geometry and layout. I have built, modelled and textured, using 3DS Max, Unreal Engine and Substance Designer.

Elliot Maltby
Anomaly

I have created an environmental puzzle game using Unreal Engine 4. I chose to do this as a way of challenging myself, as well as to showcase my ability at VNBS (Visual node based scripting which is Unreal Engine's in-house scripting) and level creation and design. I have focused on creating an immersive environment that is easily editable for me, creating systems that I can customize easily helped to cut my development time down. In the game the character is tasked with fixing an anomaly contained within the time core, the building has been evacuated and lockdown has been started so the player must solve puzzles to unlock the way to the time core.

Alexander Bennett
Crank

My project goal was to create a 2D platforming shooter, in the style of games such as Super Metroid and Mega Man. Using the Unreal Engine 4's Paper 2D feature I have created a game using three core skills I have learnt during my time at Teesside University; implementing core principles of design to create a fun and comprehensive experiments for players, blueprint scripting and pixel art production and animation. The gameplay adds a slot machine of random power ups on top of the tried and tested platforming formula. During play that creates an experience where the player must adapt their play style; defensive or aggressive twitch gameplay, depending on what power the RNG gives the player.



Jack Fahey
Breach

As an aspiring UI designer, my project's main focus is on user interface and user experience. My project is a futuristic, non-combat based game which involves the player controlling a SWAT team while they storm a building, the player must make decisions based on several factors such as risk of casualties. I created an intuitive and consistent in depth user interface helping the player by giving them information about the choices they have to make while including the factors and how it affects the overall outcome. Within my project the menu system contains extra features where the player can view a variety of weapons which are broken into sections where the player can view information for each part, such as the stock, the barrel etc. I used software from 3Ds Max, Photoshop, Illustrator, Unreal Engine 4 and Moqups.

James Stratton
KF-HighStreet

KF-HighStreet is a custom map for Killing Floor 2 creating using the Killing Floor 2 SDK. It supports up to six players and works in the games survival mode. The map is a small urban environment with many enterable buildings and a focus on verticality. I wanted to simulate what it would be like to work at a studio on an existing game using their software. I decided to work on a mod for Killing Floor 2 which uses a modified version of UDK. This project allowed me to improve my level design skills as well as getting used to industry practices, documentation and workflows. It also requires me to work with assets created by different disciplines and integrate them into the level or make sure they work correctly during the level. This also prepares me for studio specific practices in this case Tripwire Interactive with their modular static mesh set, splatter maps and various other Killing Floor 2 specific practices.

Daniel Hall

Invasion of Peleliu

The Invasion of the small island of Peleliu was a bloody battle between the Empire of Japan and the United States during World War 2. My project follows the story of three characters from the 321st Infantry division on the 23 September 1944. With a landing craft pilot, engineer and sergeant, different areas of fighting get the light shone on them and their roles come to life in my project. The horrors of war are replicated within the Unreal Engine. Throughout this project I have developed a greater understanding on level pacing and creating a level that is fun and thoroughly enjoyable for players. This project has also allowed me to develop my understanding of creating both friendly and hostile AI to a level where I am confident to show it off. During this project I have been able to fully dive into lighting and sound to further widen my skillset.

Jonatan Carrillo Pedraza

Dante's nightmare

In Dante's nightmare, I planned to create a single player campaign purely centred on its arcade aspect and making use of the snapmap tools that the game Doom (Bethesda, 2016) offers to create your own levels. The campaign is divided in different areas, each one being a representation of my vision of the levels of hell in the famous poem The Divine Comedy (Dante Alighieri, 1320). The levels increase in size, complexity and difficulty, always keeping in mind the total time available to complete this project. Making use of the assets that Bethesda offers in snapmap and the pre-existing room layouts, I created that feeling that the player is trapped in hell and he must fight his way out of it by descending to the very bottom.

Danielle Sinclair

Murder at Black Manor

I have made a 3D mystery game based on the board game Cluedo. I have designed a level based on the original board. The single floored layout of the Cluedo board was rearranged to multiple floors with the unused board space made into smaller more appropriate corridors, with several rooms added to the house to make it more realistic. My aim was to improve my level design skills and to better understand mechanics using blueprints in Unreal Engine 4.

Adam Beard

The Last Signal: Isolation - level design and mechanic prototyping

The Last Signal: Isolation is a level that would be part of an open world first person shooter. The level is part of a mission where the player is sent out to explore an alternate history 2024 Des Moines Iowa after the second American civil war, and discover the fate of a missing FBI agent. I wanted to look at how a modern civil war would look like in the heartland of the United States and tell this story to the player through the level. My main aim was to create a high-quality level with prototype mechanics that allow the level to be play tested and iterated upon. I have experimented with areas of design I haven't had the opportunity to work with. The level was created in Unity 5.4.3.f1, which I used to block out, script the mechanics, and eventually dress the set using asset packs. As the level is based upon a real city, I used Google earth as inspiration to create the area and then I used images of urban exploration to create how these places would look like after a major battle took place.

Michael Howe

The Wasteland Maelstrom- A Fallout 4 Mod

Using the Fallout 4 Creation Kit I have chosen to develop a location mod for Fallout 4. The mod involves the player discovering a location known as the Wasteland Maelstrom, a large prison-like dungeon filled with the wastelands deadliest enemies from Raiders and Ghouls to the powerful Deathclaws. The Maelstrom should challenge any Wastelander brave enough to enter it. I am a huge fan of Bethesda and the Fallout series and wanted to create something in the same vein as my idols. The Creation Kit provided a steep learning curve and required me to learn what it could do in a short time frame. But I am happy that I have developed my skills in such a fun to use engine and has developed my design skills considerably. I believe using such a tool has also given me insight into how Bethesda and their in-house software works too.

Melissa Young

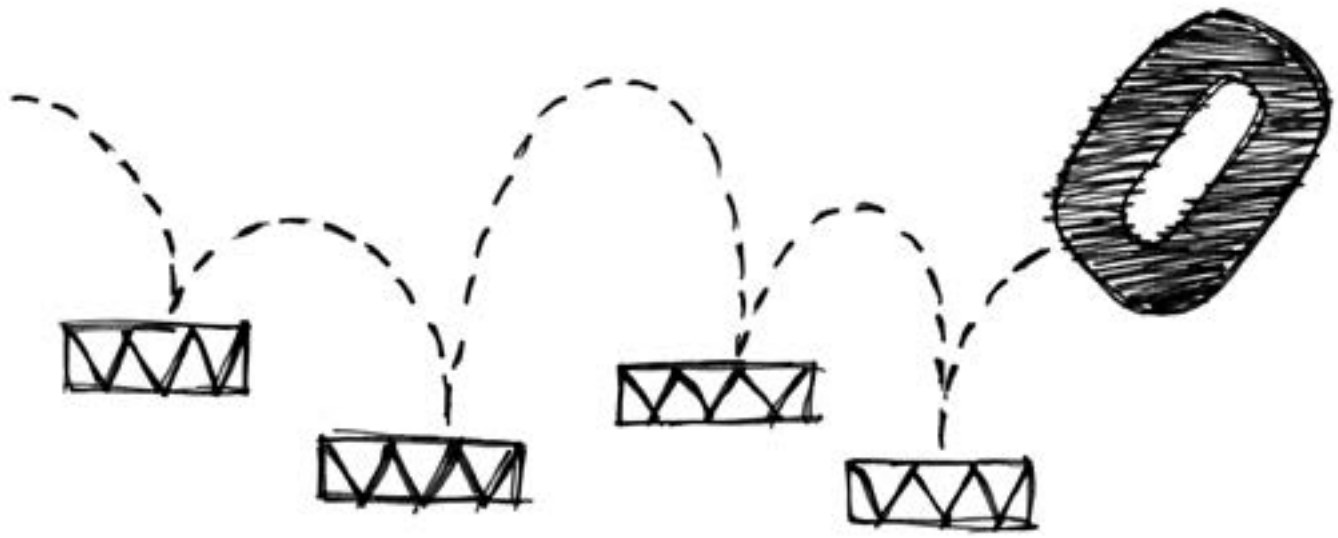
Long Way From Home

Long Way From Home is a first person sci-fi action adventure level with puzzles and platforming. This narrative experience lets the player take the role of a lonely space mechanic who experiences vivid dreams about his life on earth. I used Epic Game's Unreal Engine 4 in order to create this level an engine which is now commonly used by industry professionals. I wanted to show off an array of skills including level design, writing and user interface.

Jack Stobbart

Rust Wars

Rust Wars is a single player top down 3D shooter created in the Unity engine. You play as the last surviving member of a mercenary group, who, with his tank, must survive against the oncoming waves of enemy forces. As you defeat enemies, you earn currency to progress down a variety of upgrade paths to suit your play style, as well as upgrade the environment around you to increase your chances of success. Using the range of skills that I have developed during my studies, I have made a game prototype. Planning and documentation done using Microsoft Word and Excel, Complete with 3D environments made in 3DS Max, Animated tanks using Maya, and programmed using C# in the Unity Engine.

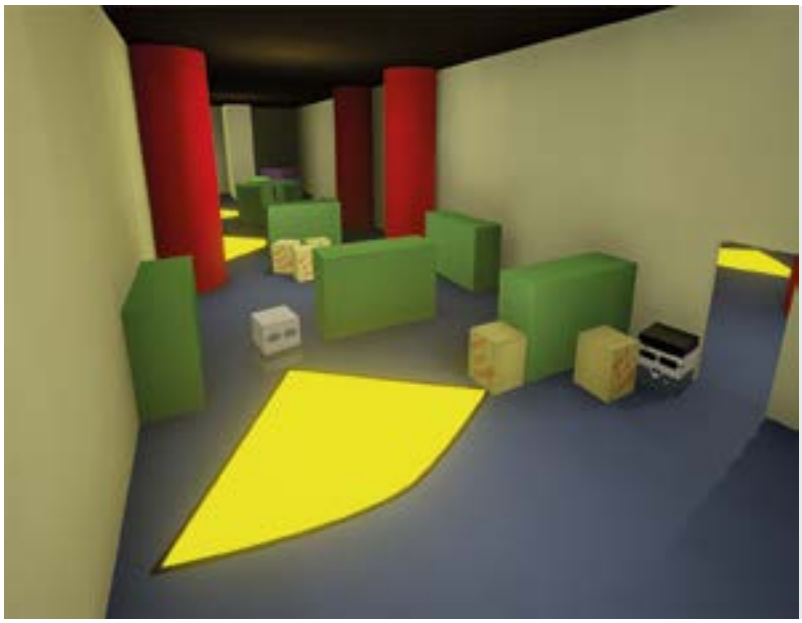


BA (Hons) Computer Games Design (with Foundation Year)

Alex Khurana

Project Panic

Shooting games are becoming increasingly popular so I set out to create my own with mechanics in mind. I decided to create a hoard game mode incorporating AI behaviour and set mechanics for the player where I wanted to situate a fast paced FPS survival game. The game is driven from design ideas from the app industry and modern shooters. Incorporating this idea then led me to the creation of level design where I focussed my efforts on creating multiplayer levels that function as an orbital motion for a hoard system instead of a linear path. Further development then led me to create an interface incorporating a menu screen and in game prompts. The premise of the project was to create a game using UE4 with blueprints to formulate the project.



Luke Duffy

Where squares go to die

For my project I created a third person action/stealth game where players take on the role of a spy taking part in espionage. Instead of regular people, the world is full of shapes and the game has a comedic/cartoon tone to it. The player will take on the role of Carl Pie, a secret agent sent on missions to save the world from villains of all sorts. The demo I created takes place in a secret base where Agent Pie is taken after being captured. Pie must escape and stop the evil villain from unleashing his evil plan upon the world. I used 3DS Max and Unreal Engine to create this project.

Michael Saunders

Lone wolf

I have designed and developed a game, using Unreal Engine 4 to demonstrate gameplay and level design from a games design and story I created. It is a third person, open world, 3D platformer game set within the Icelandic forests, using low poly assets. The player will play as a wolf called Varg and is tasked with exploring the level looking for the meat resources located throughout to complete the game. The player must run, jump, and avoid throughout the world to be able to platform their way through the game. There are many hazards within the world and so the player must be aware of their surroundings. All the mechanics within the game are set up using the Unreal Engine 4 Blueprint system, I have also utilised Unreal Engine 4's particle system and Terrain editor. As well as using Autodesk 3Ds Max and Adobe Photoshop to help create some of my assets.

Robbie Marram

Pool club

Long Way From Home is a first person sci-fi action adventure level with puzzles and platforming. This narrative experience lets the player take the role of a lonely space mechanic who experiences vivid dreams about his life on earth. I used Epic Game's Unreal Engine 4 in order to create this level an engine which is now commonly used by industry professionals. I wanted to show off an array of skills including level design, writing and user interface.

BA (Hons) Creative Digital Media

Hoang Duong Nguyen Si
Alka the walking city

This project focuses on creating concept arts for a game setting in a moving city with a nomadic Middle East/Asia merchant culture. This includes the concept for the city, the residents of the city as well as final polished marketing artwork for the game. The goal of the project is to create professional level quality concept and marketing artworks for games that could be used by 3d modellers as references when creating in game assets and for the art director to pitch and sell his/her ideas.

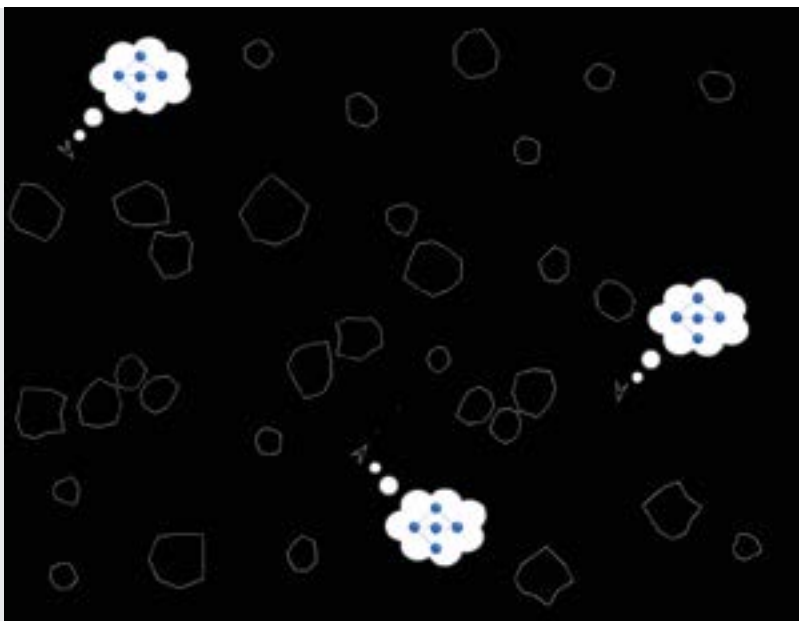
BSc (Hons) Computer Games Programming

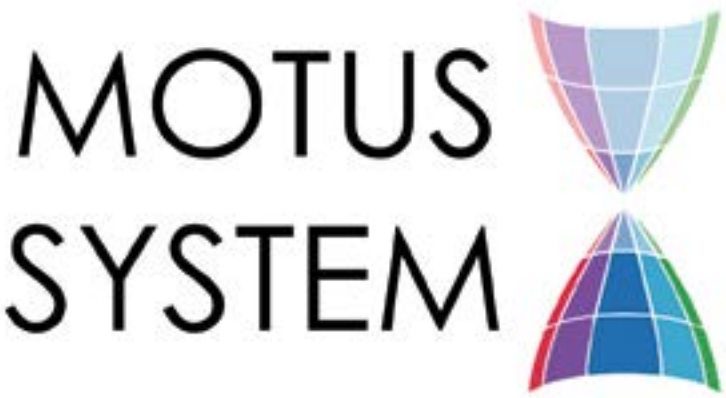
Darien Livermore
Vertex-based morphing

I have explored the functionality needed to implement the morphing of models at selected locations, as opposed to morphing the entire model uniformly. It is not uncommon for the appearance of characters to change in order to fit their circumstances. Vertex-based morphing will aid in this transition. By allowing each part of the character to be altered independently, this will provide the user with an outcome that is more accurate to their given situation, producing a more immersive experience. Although this project was initially developed for use within the games sector, it also holds the potential to be applied within animation and education. Developed using OpenGL and C++, this project also takes into consideration the use of advanced rendering techniques, spatial partitioning and polyhedral raycast detection.

Brandon Curtis Thomas
An evolutionary neural network tool for game AI

My goal was to create a machine learning tool to be able to reproduce intelligent behaviours in game artificial intelligence. When considering AI in games, most people understand that the antagonists are going to challenge the player in a predetermined way. Nowadays, gamers insist on more challenging computer game opponents. The purpose of this project was to develop an AI development tool able to create and adapt solutions for this new type of behaviour and decision making. I looked towards machine learning as inspiration for this project, a subject undergoing intense study. This project consists of a novel neural network solution incorporating these state-of-the-art systems to develop effective artificial intelligence efficiently, and a classic arcade game scenario acting as the training grounds for AI development. Both the tool and game application were written in C++ using the C++11 standard within Microsoft Visual Studio 2015, with the game supported with the SFML 2.4.1 libraries.





Joshua Beech

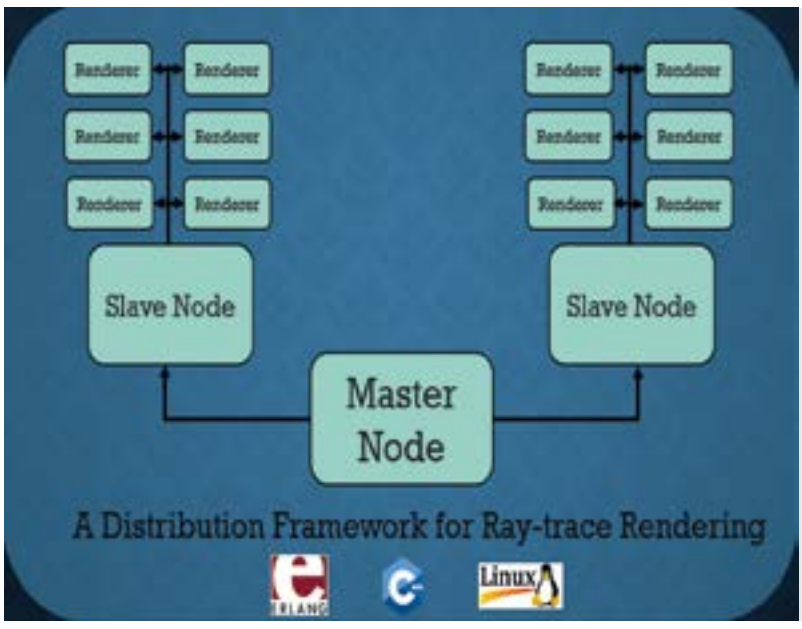
Motus AI system

The Motus AI system is an artificial intelligence system for games that emulates emotion in an AI. This allows the AI to change its behaviour based on its current emotional state, which will adapt based on player actions and events in the world. For example, a natural disaster could terrify the nearby civilians, the player could then help people causing the civilians to adore the player and want to help them in the future, or the player could ignore the situation thus causing the AI to resent them leading to repercussions in the future. This can improve the immersion of the game by allowing the player to craft their own experience. The system is designed not to be built-in to a specific game thus making it easier to use across multiple games and genres. To accomplish this I built the system as a library plugin, in Microsoft Visual Studio, and created a demo level using Unity.

Christopher Walters

Natural dispersal of information in video games

My project demonstrates an alternative approach to the dispersal of information within a given virtual world. It is designed to allow characters to gather information from their surroundings and from other nearby characters to simulate the realistic circulation of information. The system I have developed could produce a huge variety of options that potentially affect the final outcome of the storyline, therefore drastically increasing a games re-playability value. To maintain reusability I produced a C# class library that contains all core functionality of the project. To demonstrate its capabilities I also produced a small game environment in Unity 5.4 where I set up a range of characters that use the new system. In order to demonstrate the inner workings of my project and to help visualise its process, I also developed a range of debugging tools for the Unity Editor to be used with my small game environment.



Christopher Duncan Munro

A distribution framework for ray-trace rendering

The purpose of this project was to create a framework that can be used to distribute a ray-trace rendering workload over multiple networked machines. By doing this the total time taken to render a scene will decrease significantly. During this project I have furthered my understanding of computer graphics and computer networks. I have also gained more experience with the Erlang programming language.

Benjamin James Sandwick

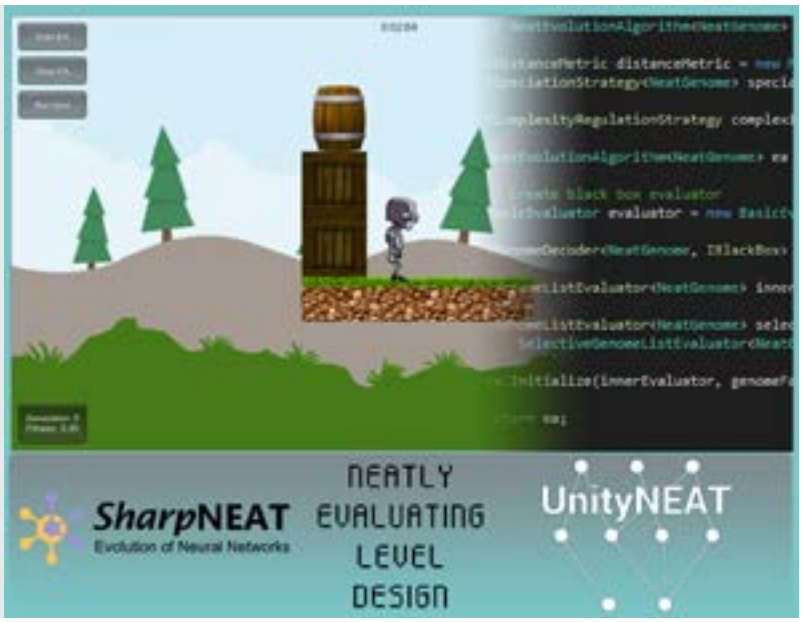
Deify

Deify is a God game which will offer players a more immersive experience by using hand tracking technologies to translate their hand movements in to the virtual world. You'll be able to support your followers and destroy their enemies all by using your own two hands!

Andrew Ayre

NEATly Prototyping AI Features

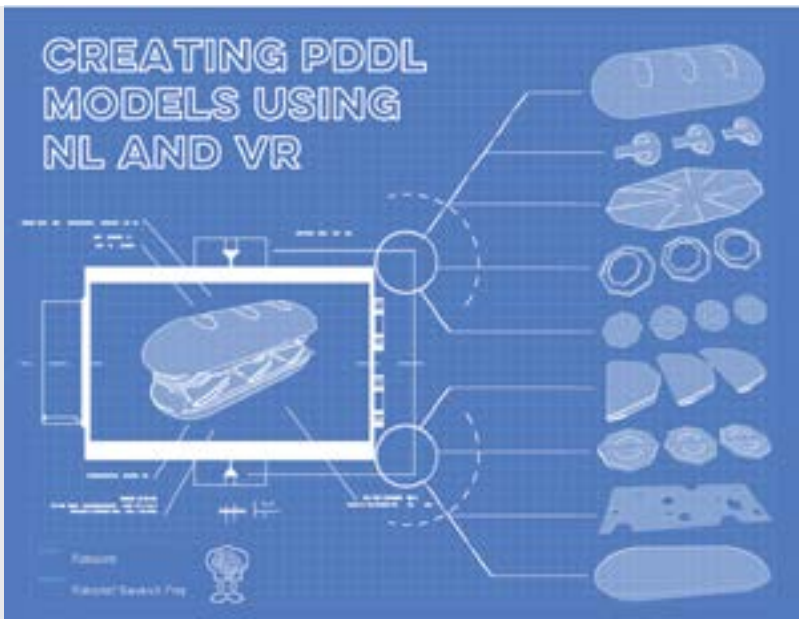
Taking a fresh look at ways in which machine learning can be used as part of the game development pipeline, my exhibition shows a plugin I have developed for the Unity game engine which uses Neuroevolution of Augmenting Topologies (NEAT) to train an agent to complete arbitrary 2D platforming game levels, driven by developer-assigned modular inputs. The purpose is to streamline and reduce the resource cost in prototyping and early stages. By setting up modular inputs to drive the neural network evolution, developers can highlight useful features for driven AI code, and efficiently test out the viability of adversarial or co-operative agents. My work abstracts this functionality into a UI-driven plugin suitable for all 2D platformer games built within the Unity engine.



Thor Christian Jack Bunting

Creating AI planning models using natural language and VR interaction

The work shown is a demonstration of using natural language descriptions along with actions within VR to create a planning model for AI. This planning model is then used to make an AI carry out the learned behaviours. This allows creation of planning models and AI behaviours without prior knowledge of a formal planning language. In this case the AI is trained by describing their actions while they prepare food within VR. This data is then used to generate a planning model and the AI can be asked to carry out the actions it has learned. The project is built in Unity and leverages Google's Cloud Services for speech recognition and language analysis. Planning models are generated in PDDL allowing for general use and analysis in a number of applications.



Maximiliano Victor Coren

Multimodal interaction through intelligent agents: Using AI as a collaborator in games

My project is oriented around AI, and was inspired by games like Black & White and Creatures. I wanted to create an AI that can learn through experience as well as when taught, by creating a cognitive model that took inspiration from biology. The resulting AI is controlled by its drives, which influence what the AI's goals are, which leads it to create plans and act on them. The outcome is then compared to what the AI was expecting and its internal knowledge base is updated. The user can teach the AI through text, as well as give it commands through the same interface. I used Unity to create a simple game world for the AI to interact with, controlled through C# scripts. I also applied multiple different AI techniques, ranging from classic algorithms such as A* pathfinding, to techniques such as context-free grammar. The use for my project would be to create more life-like behaviour in a game that's AI-centric.

Sam Groves

Homuli: The digital age

Homuli (pronounced hom-you-lie): The Digital Age is a program that allows people who are interested in traditional paper based role playing games (RPGs), such as Dungeons & Dragons, to be able to play with anyone in the world without the need for the player to be at the table. The program allows players to create and store their characters and create worlds for them to play in. It is more of a management system than other similar services, allowing the game master, to tell the story they wish to tell without the limitations imposed by these services; such as limited monster designs or environment assets. The product was created using a combination of the WPF, XAML, .NET and C# languages; programmed in Microsoft Visual Studio 2013. It utilises peer-to-peer connectivity with AES encryption and stores important data such as passwords using PBKDF2 to 1000 iterations; stored in a hexadecimal format. The product allows players to load or create character sheets, load or create dungeons, video communication and macro creation.

Ranjeet Jandu

A2Beat - auditory impact on gameplay

A2Beat is a platforming game that will react to the music and sounds around the player and game level. The aim of this project is to explore how audio can contribute into creating a game that can offer endless replayability to its audience. The games audio could potentially influence player speed, enemy AI, stage hazards, visual representations and other additional elements. To accomplish this I will be making use of widely known industry tools such as Unity and Wwise to create an audio programming solution to analyse and create parameters based around audio that will need to be created and the means in which to be able to communicate this to the game itself.

Benjamin Lowden

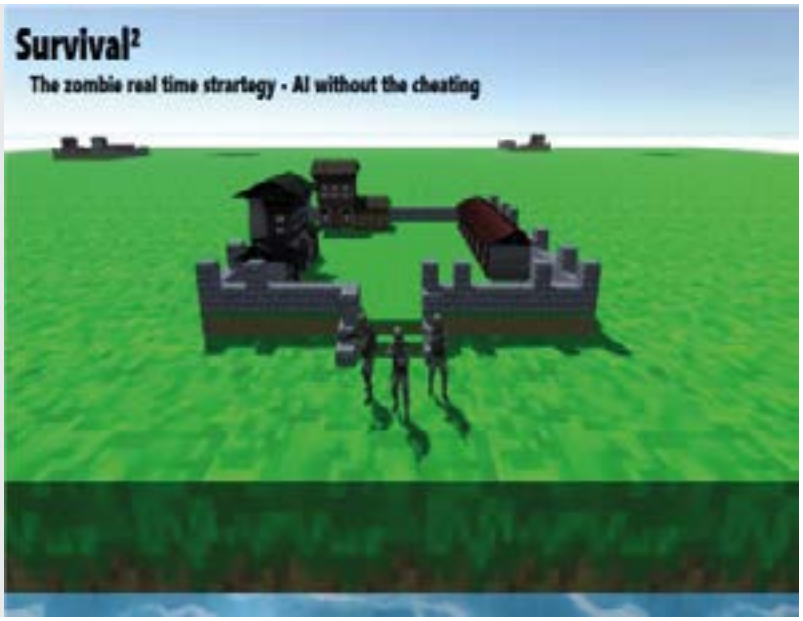
Plant simulator: A simple chemical process simulator

Chemical plant simulations have been around since the early 90s, and have been renowned for the increased performance gained through the accurate simulators. Chemical plant simulators allow the user to create and simulate their own plant with a high degree of accuracy and they can aid in the addition of new machinery to a plant and running through various scenarios for the highest efficiency connections. I have been developing a web-based chemical plant simulation, at a lower level of detail than some of the market's more prominent simulation software. This allows for a non-technical user to be able to understand the process, and as it is being developed for the web, it is highly portable and easily accessible

Adam Hudson

AI focused RTS game

I have researched the use of artificial intelligence in a real time strategy (RTS) game. The purpose of this is to focus on how AI can be designed in a RTS game. The focus is on two components, one being the player's units, which will use A* pathfinding in combination with resources to calculate a path that picks up necessary resources along the way to be able to continue. The other being how AI can be designed to be fair and not cheat. This will be accomplished by having unit path finding not need to cheat resources for their units to make the journey as the player will be able to work out where to go for resources themselves; the AI would need this for their units to make the correct journey to get to the destination. I hope to display that AI can be designed in a way that doesn't give it an unfair advantage, which is a design flaw in modern AI RTS games. This is all done using Unity and my skills learnt in C#, which I learnt after learning C++ and Java.



Jenaid Ahmed

Skrrr

I am showing off my racing game prototype which makes use of AR technology to generate the core map for the game. The reason my game is different to most other racing games out there is because one it makes use of AR technology, secondly it has a title that many can relate to in real-life and three it has got a wide range of features that helps appeals to a wider audience. The game was developed using Unity 3D with the help of asset packs to give me the foundations to work with in bringing the prototype to life..

Duncan Mellor

AI civilisation simulator

My project is an AI that works on expanding its own civilisation while making sure its citizens are taken care of. While expanding the AI will be keeping track of the citizens' health which is affected by natural factors such as stress or hunger. The purpose of this project is to show that within games, more complex AI can be used due to the development of technology. This has been done within Unreal Engine 4 using the C++ language, the AI makes use of finite state machines and behaviour trees in unison to accomplish this.

Frederic Wijaya Babord

Glass Engine 2017

Glass Engine 2017 is a C++ component based game engine with a Vulkan graphics renderer. Vulkan is a next generation graphics API that will supersede OpenGL, as it gives developers more control over the graphics pipeline. The component based approach is similar to how existing engines enclose specific functionality into individual components. Glass Engine also supports rendering to a Virtual Reality Head Mounted Display such as the Oculus Rift or HTC Vive. This helps to showcase the performance and optimisations the engine must achieve to prevent motion sickness. This can be seen in the multithreaded renderer which was more challenging to achieve in previous APIs as the application would be able to split its graphics rendering across multiple physical and logical cores. I have gained a deeper understanding of the low level graphics pipeline as well as a more thorough understanding of engine and VR programming.

David James Cuthbertson

A human-like artificial intelligence for fighting games

I am exhibiting an artificial intelligence that I have created. It is able to play a fighting game through observation of its human opponent and attempts to recreate their playstyle through a combination of reinforcement and imitation machine learning methods. I have a strong interest in AI and believe that this AI will be useful, not just for my own projects, but also for others projects. To create this AI, I have used Eclipse, the Java IDE, and FightICE, an AI development framework created by Ritsumeikan University, Japan. Throughout the project I have learned several machine learning techniques and new gained experience with Java.

James Llewellyn Lamb

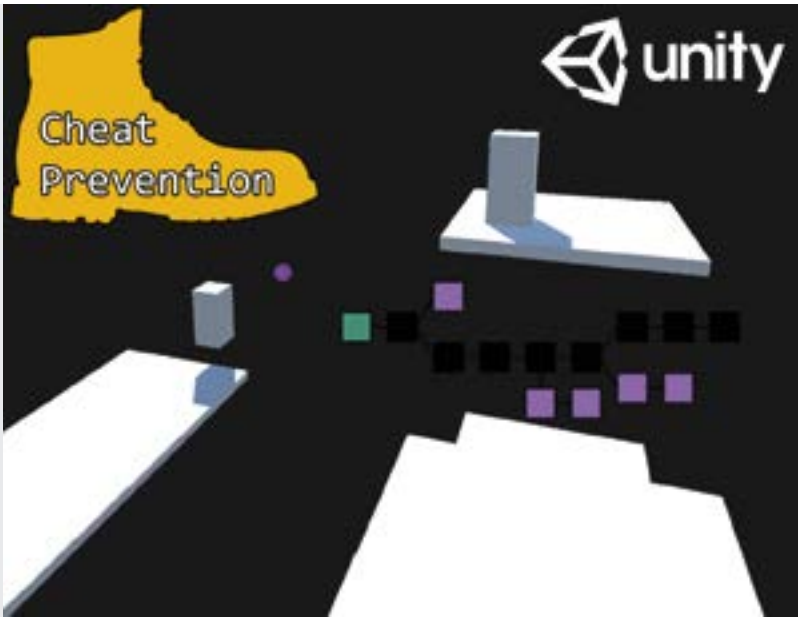
What happens when rock, paper, scissors meets a tactical turn-based game?

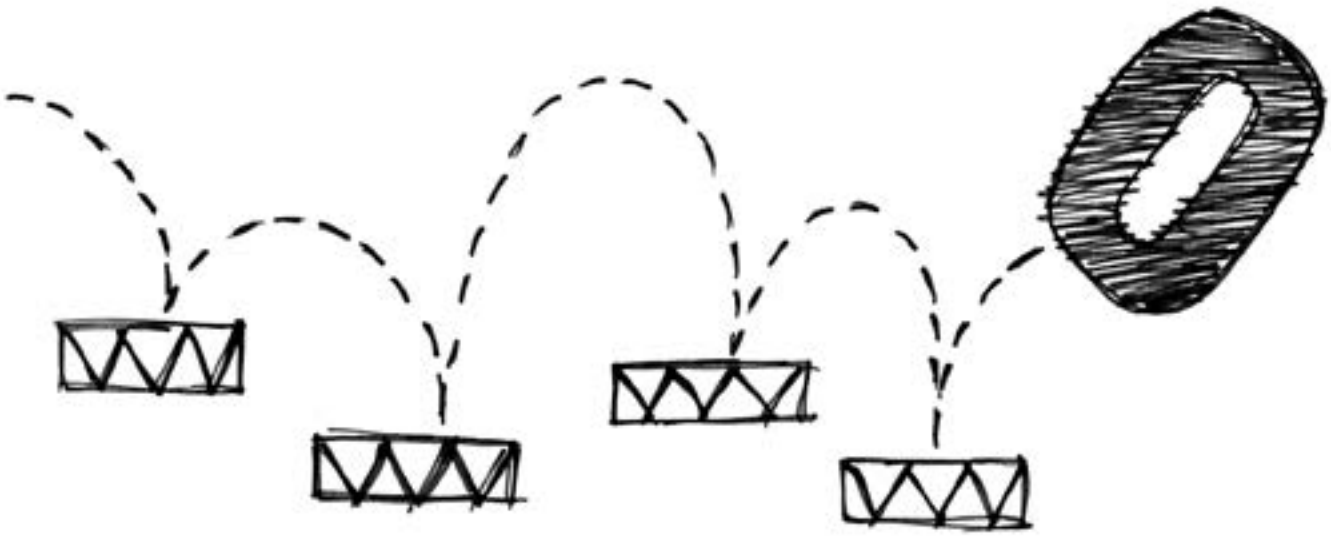
Will rock actually beat scissors? Does paper beat rock? These are the type of important questions that will be answered in my tactical turn-based game. Aim of the game? Kill the enemies before they kill you. It might be difficult as they are one of the rock, paper, and scissors species. Counter, kill, conquer.
I am showing off my strategic turn-based game where the AI is my personal view on rock, paper and scissors if they had personalities and abilities. As the player, you can move, shoot, and run away from the enemy. It won't be too easy as rock, paper, and scissors will have different tactics. I want to show everyone just how much a person can do in three years; how someone with no knowledge of programming in the start can work in C# and Unity® game engine, and make something out of nothing.

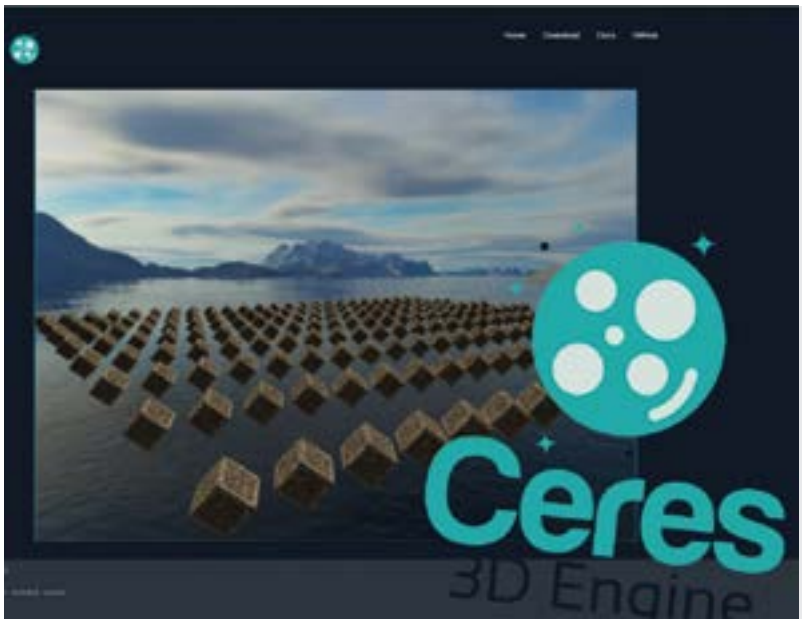
Gordon Cummings

Cheat prevention within a peer-to-peer multiplayer environment

I have developed a real-time multiplayer game that uses the peer-to-peer network model with built-in cheat prevention, building upon my previous experience in networking with multiplayer games using the client/server model. This has exposed me to a new networking model as well as the issues faced with networking including cheating and latency.



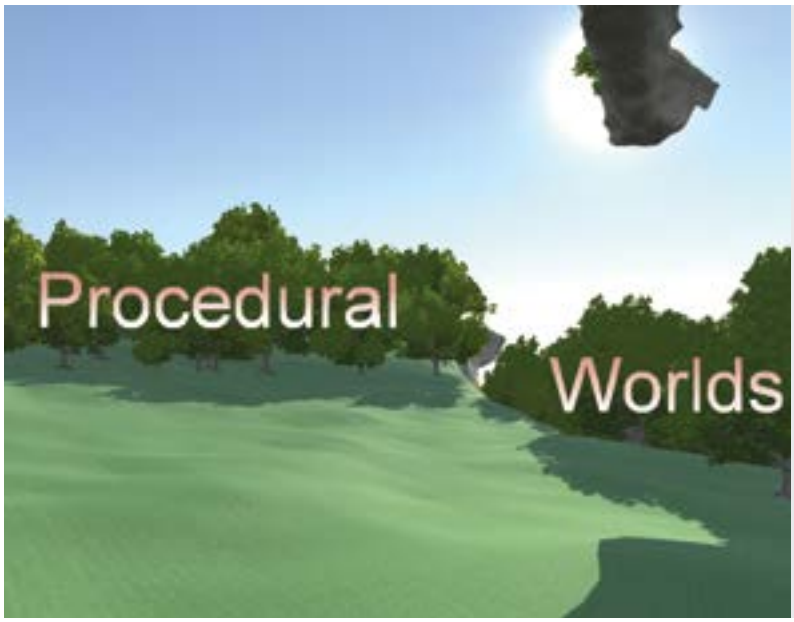




Jose Luis Jimenez Urbano

Low level WebGL game engine: transpiling C++ to asm.js

My project aims to create a render engine, written in C++ which can generate the scenes in WebGL using low level JavaScript, achieving a higher level of performance than usual WebGL. The engine will be given to the final user as a C++ static library plus the header files. The user will write the scene using a simple API in C++ and then the code will be transpiled to low level JavaScript (asm.js) using Emscripten.



Adam James Dinsdale

Procedural Island

Procedural generation has become increasingly popular in recent years with titles like Minecraft and Rust with Minecraft reaching 106,859,714 copies sold on all platforms as of 2 June 2016. I first looked at procedural terrain generation but using different methods to most current games, instead of using 2D images to define the height of the terrain I have used 3D data that is created using procedural noise and used a form of Marching Cubes to form the geometry. There are two benefits one is that you can have terrain that features overhangs and archways, secondly the terrain can be altered by the player's actions for example digging into a cliff in search of minerals. This method is then used alongside others to produce interesting worlds with trees, roads and points of interest, I have created a small demo of an island produced procedurally then worked on optimizing and creating a more realistic environment to create the foliage and fine details.

Johann Ostero

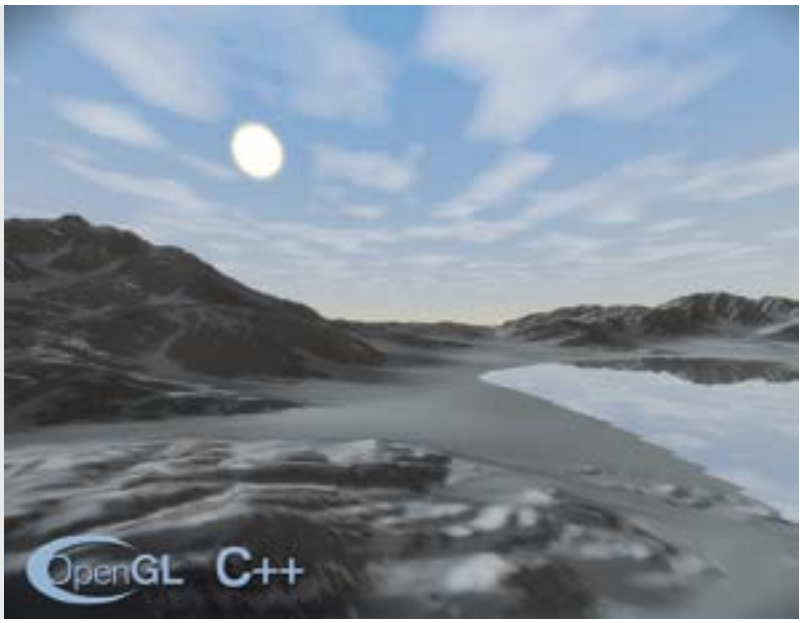
ClayMesh

ClayMesh, is an open-source, real-time 3D mesh manipulation plugin made for Unity 5. The aim is to allow users to change the shape of any given mesh at runtime with relatively decent framerates, moving, removing and adding vertices on the fly. The focus is on games development and visual simulations. The skills gained from this project were the inner works of mesh construction as well as fast advanced triangulation methods.

Ignacio Cortizo Pol

Nature rendering

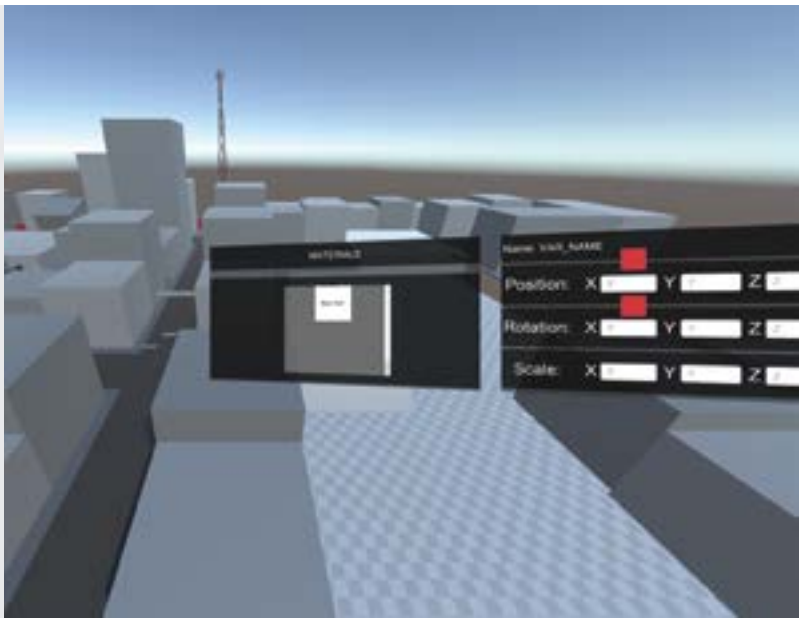
This project features different natural elements like large terrains, water, clouds and vegetation. These elements are presented to the user using a modern pipeline: high dynamic range rendering, tone-mapping, lens flares, physically based rendering etc. Some optimisation techniques (like frustrum culling, clip planes, pre-calculating values etc.) had been used to provide the best frame-rate possible. This is a great project for a graphics programmer as you can showcase many different elements and how you put them together as well the optimizations needed to run it on real-time. I've developed this project using C++ with Visual Studio 2015 as my integrated development environment. I also implemented a rendering framework using OpenGL. To handle input and window creation, I integrated GLFW into my project.



Fernando Ferrando Terradez

Virtual reality editor application for Unity 5

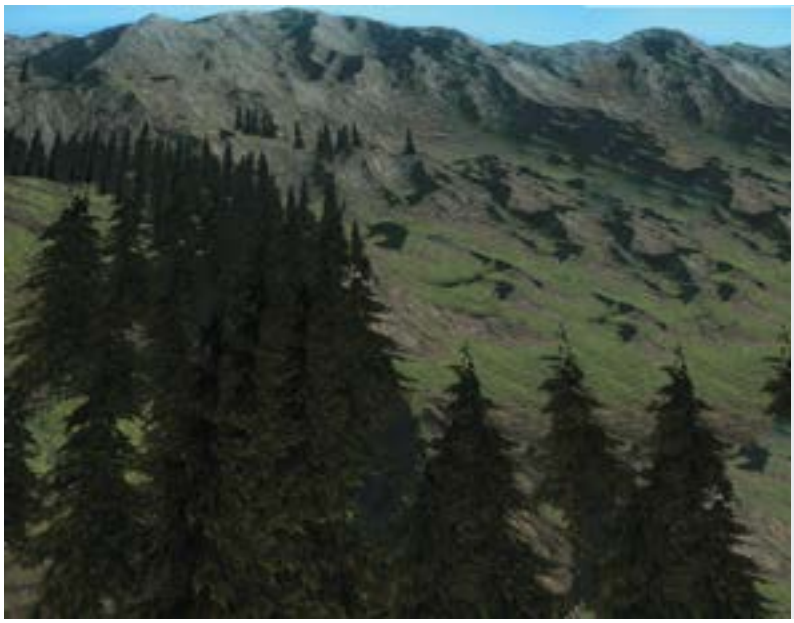
This application uses virtual reality (Oculus Rift) in Unity 5 for editing scenes, generating a file with the assets added, and loading them again in the engine, allowing people to edit maps without having the actual engine, allowing people to edit maps with runtime loaded assets, export the changes, and pass it to another teammate to speed up the development.



Jose Manuel Naranjo Temprano

PBR: Material Editor on Multi-threading Engine

This is a tool to design and work with rendering materials and to test, measure and develop different models of bidirectional reflectance function. Actual games require advanced rendering techniques and this tool helps include new shading models into game engines. It allows the user to load models, work with their materials, different shading models, test those models with different illumination models and measure their performance in real time. The user can also implement their own shaders into the tool and compare their performance and visual aspect. I developed this tool over a custom engine code from scratch. The engine is based on modern multi-threading techniques, taking advantage of the features of C++ 11 (lambdas, templates, etc.) and works with an agnostic graphical API. The actual implementation renders with OpenGL 3.3+; and easily extended with other APIs. The importance of the tool comes from the ability to develop fast and test new PBR models into a fast and light rendering engine.



Daniel Sierra Hernandez

Real-time procedural planet rendering

Procedural generation has been growing over the years until it has become a standard in the video game industry. The power of current computers enables us to create rich and vast worlds at almost no cost. It provides a toolset of techniques that can aid designers and artists to populate worlds and generate content that is visually appealing. This project aims to reduce the cost of creating such worlds by generating the geometry, atmosphere and vegetation of the planets so that artists and designers can focus on the key areas of the video game. This project has allowed me to improve my graphics programming skills as well as develop a better understanding of the mathematical background behind popular procedural generation techniques.

Juan Daniel Laserna Condado

Beacon of life - AI

This is a game with a multi-agent system able to keep itself in the habitat in which it is found, seeking the necessary resources to live and cover their basic needs. They can also alter the environment and learn new skills to make its life easier and enjoyable. The idea is to make the AI able to learn new skills by themselves and even being able to give that knowledge to other artificial intelligence. This will include the possibility of get and store materials and the ability to create and destroy buildings. The game has been made using Unreal Engine 4.

David Parra Ausina

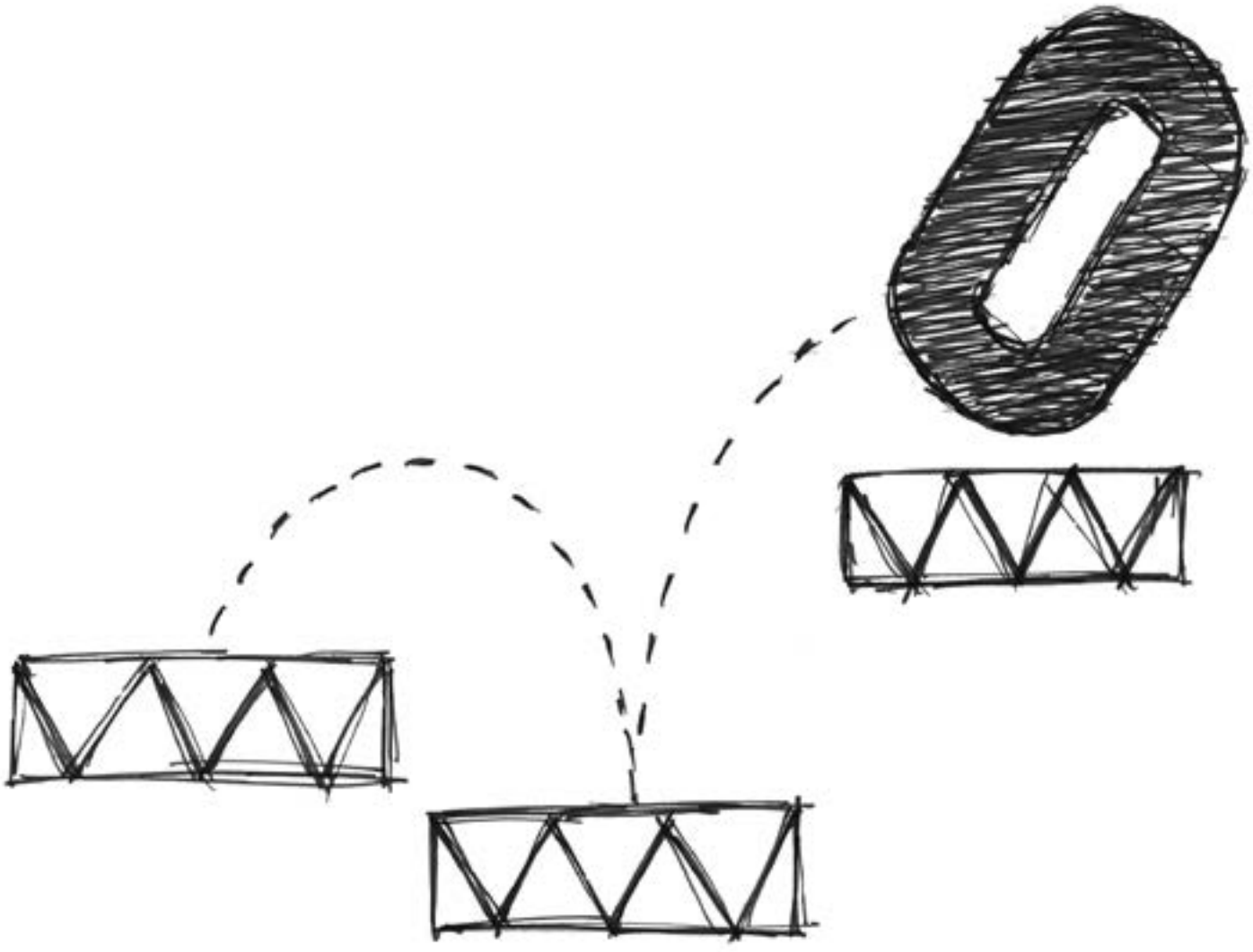
Self-learning artificial intelligence applied to videogames

What if you could train your own agents to perform intelligent actions in your game? What if your agents could learn from mistakes and improve by themselves? This project is a perfect example to show this. I developed a game simulator in Unreal Engine 4, where an AI agent has to solve a 2D platformer level by using his own senses and self-learning by experience. The agent is managed by a neural network, which tells the agent what actions to perform depending on de surrounding environment and the nearest threats, and each time it fails to avoid an obstacle it learns from it and tries to improve.

Francisco Javier Pastor Serrano

Music as gameplay

Music can be used in several ways. It can be used to express emotions, for pure entertainment. How about being used as a part of an entire game? My project is an example of this. The objective of the player is to avoid certain elements of the scene that are totally manipulated by some information that a simple background music can provide us such as, for example, frequency. To achieve it, some audio processing techniques including Fast Fourier Transform has been used. It has been developed in C# with Unity as the engine of the game.



Graduate Profile

Lauren Duke BA (Hons) Computer Games Art, MA Concept Art for Games and Animation

3D Artist, Inertia Game Studios

University helped me to pave the way for work in the industry

I gained my master's in September and began my career in November as a 3D artist. Initially this was very daunting, and a little nerve wracking, but I soon found my Teesside experience helped my confidence grow, and over the following months I felt comfortable in my new role exploring new skills. Working with passionate people in a fun environment was also a big plus as well!

As a 3D artist my work mainly includes producing a variety of 3D modelling and texturing. My work is not limited to this; I also produce 2D art work, conceptual art and occasionally pitch in with rigging and animating as well. Working at an indie studio is never dull; there's always something interesting to work on and plenty of opportunities to pick up new skills.

University helped me to pave the way for work in the industry; the range of skills, use of software and knowledge I gained was invaluable. The tutors on both courses had a fantastic range of experience and knowledge in their fields of study, and they were also incredibly supportive which helped to push me to improve my work, and subsequently led to me starting my career.

I am very happy with my current position, and at some point in the future I would love to use my experiences and knowledge to teach passionate and talented individuals aspiring to be a part of the industry, and I'd love to become a university tutor one day.

I would recommend the courses to anyone looking to join the games industry. They provided a good basis for a range of skills used within the industry, and allowed for further specialisation of a chosen skill, with fantastic support and tutoring. It also presented great team building activities that simulate working within the industry, and excellent networking events such as Animex and Expotees that allow you to showcase your work to future employers.

Overall I do feel that the course offered value for money; for me the value lay most in the staff and the tutoring they provided. Furthermore the access to facilities and certain software that would otherwise be inaccessible as a student, and 24-hour access to a range of labs was also invaluable.

Masters project exhibitors

Masters students demonstrate they are experts in their chosen fields

A master's course is an opportunity for students to choose a specialism and/or build on skills and a knowledge base gained via their undergraduate degree or from industry and the work place. Our courses include taught modules, the option of a six-month internship (on some courses) and a large research project, which is entirely directed by the student, but supervised by academic staff.

You will be able to see some of our fantastic masters projects at ExpoTees alongside the undergraduate exhibitors. These research projects are a significant piece of academic research and the students aim to make a novel contribution to their subject field and also place it in the context of previous work by others. On display are a variety of projects ranging from concept art through to cyber-security, with several situated in an international context. These postgraduate students will be either applying their knowledge in industry at the end of their course or will be embarking on a PhD, continuing to research in their chosen fields. For more information about postgraduate study at the School of Computing please contact Jackie Barker:

T: **01642 342610**
E: **scm-enquiries@tees.ac.uk**

Alec Chalmers
MA Concept Art for Games and Animation

Visualising The City and The City as a game environment

Aimee Elizabeth Lawson
MA Concept Art for Games and Animation

Playscape: Concept art for an original game

Ka Kit Lo
MA Computer Animation and Visual Effects

Wrath

Kranthi Kumar Palreddy
MSc IT Project Management

Implementing user centric design in charity project

Mst Yasmin Khatun
MSc IT Project Management

Cyber-bullying issues among college students: A research study on college policies and procedures in Bangladesh

Md Wahid Hossain
MSc IT Project Management

IT-enabled pavement management system: a decision support tool to manage pavements effectively: A case study on Dhaka North City Corporation, Bangladesh

Jennifer Lee Wenting
MA Concept Art for Games and Animation

To identify the design elements for the visual art of the Torchlight 2 game that contribute to its success.

Jowel Rana
MSc IT Project Management

Assessing the potential contribution of ICT to facilitate the project monitoring and evaluation system: Development projects under the Bangladesh government case study

Offia Chisom Ernesther
MSc Computer Security and Networks

How to mitigate database security attacks using Microsoft SQL Server: Hospital database case study.

Khandkar Estiaque Ahmed
MSc Project Management

A case study on Union Digital Centre: Impact of ICT services on the empowerment of women living in the rural areas of Bangladesh

Janewit Siripurkphong
MSc Computer Security and Networks

Security issues and countermeasure in wireless mice and keyboards

Giji Bennet Gomez
MSc IT Project Management

Business intelligence

Acknowledgements

ExpoTees is the result of the hard work and dedication of many colleagues and supporters. The team would like to thank everyone who has contributed to the success of ExpoTees 2017 and past events. We would particularly like to give our heartfelt thanks to our event partners, Amplience and FlashTalking, and our sponsors. We are very grateful for the support and dedication given by our School of Computing Senior Executive Team, Department of Academic Enterprise, Department of Student Recruitment & Marketing, and the Careers Department for their help preparing the students for ExpoTees and beyond.

Every final-year undergraduate student is guided through his or her project with the support of a project supervisor. We would like to express our gratitude to all project co-ordinators and all the project supervisors who make ExpoTees possible, and the final-year students who make the hard work worthwhile.

For any questions about ExpoTees please contact us

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Stay in touch – join us on our open LinkedIn ExpoTees group and meet academics, ExpoTees exhibitors past and present and all our supporters who have worked to make ExpoTees a success.

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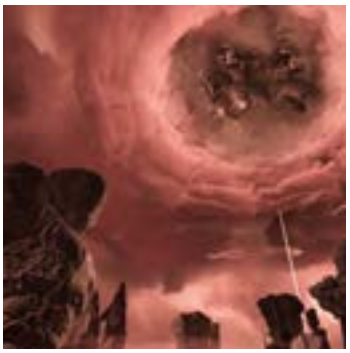
ExpoTees is enriched by the support given to us by our event partners and sponsors. If you are interested in being part of this fantastic event in the future, please contact Joanne Marwood:

T: **01642 342608** E: **scm-enquiries@tees.ac.uk**



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