National College of Ireland

National College of Ireland
PROJECT SHOWCASE
School of Computing
Final Year Student Profiles

25th MAY 2016

Time

11.30-12.00pm: Industry/Academic networking reception hosted by Dean of School of Computing

12-2pm: Project showcase

KTI
Knowledge Transfer Ireland
Where Research & Business Connect

WELCOME

from

Dr. Pramod Pathak

Dean of School of Computing

The annual School of Computing Technology Transfer Project Showcase at National College of Ireland is the highlight of our year where we recognise and celebrate the work of our final year computing students. It also marks the transition from their undergraduate degrees to their professional careers.

Our students' projects have been developed using various prevailing technologies and tools, specialising in different domains and we believe that a number of projects present commercial potential. NCI has often encouraged commercially focused endeavours with the help of venture capitalists, industrial partners, and Enterprise Ireland. Such partnerships continue to provide invaluable, real-world learning experiences and enrich our curricula.

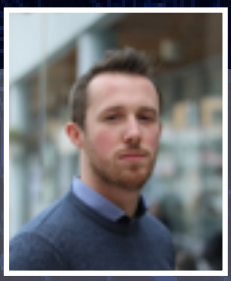
To our students, congratulations and well done! It is a tough journey that you commenced four years ago. During this time you have shown great passion and commitment. Today, you now have the opportunity to choose a number of paths – a career in the ICT industry, an entrepreneurial endeavor or continue with a postgraduate qualification. Wherever your next chapter takes you, we hope that you will always remember your time at NCI and the friendships you have made.

We are delighted to invite guests from industry to come to NCI on the 25th May to meet our academic programme team from 11.30-12pm and to view and discuss the various projects on display. More importantly, you will also have the opportunity to see first-hand the talent that exists within the student body in NCI from 12-2pm. The staff and students look forward to meeting you and sharing these projects with you.

We look forward to welcoming you to National College of Ireland.

Dr. Pramod Pathak
Dean, School of Computing

STUDENT PROFILE



Name: David Brady

Project Title: MicroDG – Distributed Data Retrieval & Generation through Microservices

Linkedin: https://ie.linkedin.com/in/davidbrady3

Project Description:

MicroDG aims to demonstrate how we can improve the speed and scalability of cloud based software systems by moving away from the classic monolithic architecture pattern to one based on microservices.

The system allows the user to dynamically generate marketing data based on geographical location. This data is retrieved from a number of sources and then processed and combined in logical manner. The resulting composite object is then written to an Amazon (AWS) S3 Bucket. Finally the user is issued a unique hyperlink which can be used to view and download the generated data object.

The motivation for developing MicroDG was to build a cloud based system of microservices for the purpose of dynamically generating and processing data (in this case sales lead data). The system addresses the need for the automated bulk tagging of freely available business data with a variety of additional information such as location data. This type of task would normally be done manually which is time consuming and not financially viable for many businesses.

Each of the MicroDG services are independent and can be accessed via a RESTful API exposed by a HTTP integration layer written in Scala, Spray and Akka. Multiple services can then be combined using an ESB like process controller. All services are designed to be activated via an AngularJS UI, providing the user with convenient data retrieval, visualisation and analytics features.

Technologies Used:

Scala, Akka, Spray, Java, AngularJS, HTML5, CSS3, Bootstrap, Fusion Charts, SBT, ScalaTest, Protractor, Docker, AWS S3

STUDENT PROFILE

Name: Wayne Flanagan

Project Title: Cloud StrApp- an alternative method of delivering application virtualisation to students

Linkedin: https://ie.linkedin.com/in/flanaganwayne

Project Description:

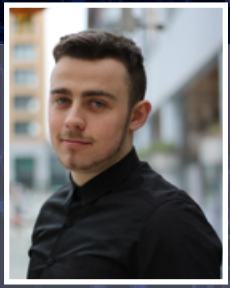
Cloud StrApp aims to provide educational institutes with an alternative method of delivering application virtualisation to students. By utilising the latest cloud technologies in Infrastructure as a Service (IaaS), from Amazon Web Services, Cloud StrApp aims to simplify the user experience, versus current VDI solutions, while providing a cost saving to end users by way of reduced personal hardware costs.

Cloud StrApp hopes to take the pain out of using virtualised applications for students. Cloud StrApp delivers streamed Software as a Service (SaaS) to users via a web application on any web-enabled device. Cloud StrApp allows them to access virtualised instances of applications rather than locally installed versions. This is how the cost savings are achieved. Software development applications of all types are processor hungry and are best suited to high spec machines. By utilising the cloud vendor's infrastructure Cloud StrApp allows users to access these type of applications from low-end thin-clients and, by comparison to those suited to run them locally, relatively cheap machines.

Technology used:

AWS, Node.js, Express.js, JavaScript, HTML5, Bootstrap, CSS3, jQuery

STUDENT PROFILE



Name: Ryan Scollard

Project Title: iPlanner – "If you don't know where you're going, you'll probably end up somewhere else"

Linkedin: https://ie.linkedin.com/in/ryanscollard

Project Description:

As a student, I have experienced many nights out where you end up walking around for places to go, due to a number of reasons such as; high prices, poor entertainment, etc. 'iPlanner' is an Android application designed to counteract this. It allows users to see exactly what's going on in a number of different locations such as promotions, drink prices, food prices, and entertainment etc., before even leaving their house. The chat functions, incorporated with Facebook, also allows users to chat with friends within the app and decide what location to attend.

Once users have decided where they want to go, they can then open up Google Maps directly from the app with just the click of a button and get a guided tour to their selected location. If afterwards, the user is fond of the selected location they attended, they can then add it to their favorite's page within the application, which are stored in a MySQL database.

Technology used:

Google Maps API, Facebook API, Android Studio, MySQL, Photoshop, Java

STUDENT PROFILE

Name: Vo Thi Thuy Linh

Project Title: AARS- Anonymous Automated Response System

Project Description:

Anonymous Automated Response System is an Educational Application which automatically suggests possible answers to queries immediately after users anonymously post problems or questions. A registered consultant can also respond to queries by posting answers or giving advice.

Anonymous Automated Response System leverages the speed and processing power of information technology to help users to locate useful relevant resources and personalised expert advice, conveniently, immediately and anonymously.

Immediately after a problem is posted, Anonymous Automated Response System first makes calls to the Google Custom Search API and renders a list of relevant resources. Secondly, the system searches through its database of experts' answers to previously posted, identical or similar, for any useful content. Result received are sorted and ordered and only the most relevant and useful hyperlinks are retained. By using sort algorithm, the system will automatically provide suggestions with highest rating.

Technology used:

Ruby on Rails, PostgreSQL, SQLite, HTML5, Foundation, CSS3, Heroku, Cloud 9, Git, Google APIs.

STUDENT PROFILE

Name: Josephine Andrews

Project Title: Final Frontier

Linkedin: https://ie.linkedin.com/in/josephineandrews

Project Description:

Final Frontier is a children's 3D educational game about space. It provides the player with an immersive space environment to explore the planets and learn along the way. The game uses the power of Unreal Engine 4 graphic potential to bring the environment to life. The player will have goals and objectives to complete in this multi-level game which are based on the rocky planets of the solar system.

There are Non Playable Characters (NPC) to interact and guide the player along the way to give a more friendly and life like feel to the game. The functionality includes interactive quizzes, visual pop ups, collectable items and a personal profile to store the players score and grade. This is created using Unreal Engine 4's visual coding called Blueprints. The game includes a login system which was developed using SQL, PHP and the SQL Database.

The characters were designed using Adobes Mixamo and Fuse and have a cartoon style to give a more child-like appeal to the game. I also used Autodesk 3DS Max modelling software to make some of the assets throughout the game.

The game was designed for age group of 6-12, the Geography Curriculum for these age groups was incorporated into the requirements of the game to ensure maximum educational achievement while having fun at the same time.

Technology used:

Unreal Engine 4, Blueprints, 3DS Max, Mixamo Fuse, SQL, PHP

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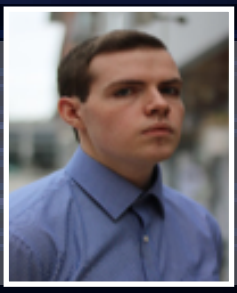

Name: Thomas Boyle

Project Title: Distributed Virtual Game Item Trading Platform

Linkedin: https://ie.linkedin.com/in/thomasnboyle

Project Description:

The virtual game item trading platform allows Steam users to transfer virtual digital game items between others users of the platform. Steam is the largest PC gaming platform and has over 8 million concurrent users daily. Users can post trade offers on the website and can also raffle their items against other users of the platform. The project is distributed and load balanced and scales cloud computing instances to meet the demand of the service.

Users of the platform trade with bot accounts which interact with the Steam API to provide trade functionality. These bots hold the items of every user and this metadata for item location is stored in Dynamo and used when attempting to use the items for raffling or for withdrawing items. All the slave Steam bots connect to a master manager who monitors the health and virtual game item inventory capacity of each bot and appropriately tasks bots with jobs to carry out against the Steam API. The manager maintains metadata on the bots and ensures that the Steam API is healthy for querying.

Technology used:

Java, C#, AWS DynamoDB, AWS SQS, Play Framework (Scala), Spring, JavaScript, IntelliJ IDE

STUDENT PROFILE

Name: David O'Brien

Project Title: Continuous Integration using Docker Containers

Linkedin: https:/ie.linkedin.com/in/davidobrien212

Project Description:

With the increasing popularity of test driven development using Continuous Integration platforms such as Jenkins or Atlassian's Bambo, it is important to ensure there are suitable environments in which to run tests.

Typically this would involve many physical or most likely virtual cloud based machines running appropriate operating systems and runtimes to test. This can however lead to a significant investment in machines which in turn requires a greater operational cost.

Using a UNIX virtual machine, as an example, one way around this would be to install many different runtimes on a machine to test varied software however this will lead to bloated environments that could lead to software conflicts.

With software such as Docker we can instead create containers that run directly on the same UNIX machine but exist in isolation from each other. This allows dedicated containers to be tailored directly to the particular build (Jenkins) that will be using it. This process allows more utilization of individual virtual machines and more importantly will require less machines overall which can translate into savings on operational costs.

Technology used:

Docker, Gradle, Groovy, Red Hat Enterprise Linux, Amazon EC2, Jenkins Continuous Integration, Git Version Control.

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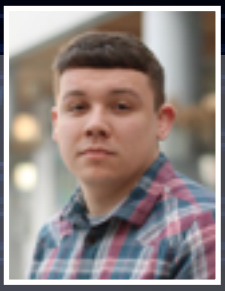


Name: Jamie Mulvaney

Project Title: Twin Darkness - "Built both for the present and future of the gaming industry"

Linkedin: https://ie.linkedin.com/in/jamiemulvaney93

Project Description:

Twin Darkness, uses Unreal Engine 4, voted #1 best game engine of 2015 to deliver outstanding graphics and performance. Built from the ground to use Oculus Rift so the player will be fully immersed in this shadowy episodic thriller.

Twin Darkness is a fully dynamic engaging environment, loaded with key features:

- Advanced A.I's, developed and implemented decision trees with advanced audio and sight detection branches ensuring realistic responses.
- Dynamic Options Menu, ensuring the game can meet the system for the best performance and graphical output.
- Fully engaged 3D environmental assets.
- Integrated Virtual reality, ensuring a perfect immersed gameplay experience for the player.
- Uniquely designed and developed main character, with advanced passive and active ability options ensuring the player is engaged.
- Gameplay/Story designed around the concept of episodic storytelling.

You the player will take the role of Gemini, a young women with a past that is hidden to everyone including herself. As Gemini, you awaken within a facility called Equinox controlled by someone or something truly dark. From there you must uncover the truth, survive what's been done to you and most importantly escape.

Technology used:

Unreal Engine 4, Blender 3D Modelling Software, Mixamo animation tools, Photoshop CS6, Oculus Rift (Virtual reality) Software and Hardware.

STUDENT PROFILE

Name: Rotimi Oluokun

Project Title: Payd- a secure means of completing instore and online transactions

Linkedin: https://ie.linkedin.com/in/rotimioluokun

Project Description:

The aim of this project is to provide users with a secure means of completing instore and online transactions, to reduce instore cash handling, to maintain merchants and customers transaction records, and to provide merchants with information on their customers' transactions and their store's performances. The system acts as an interactive alternative to loyalty/club cards allowing both customers and merchants to benefit from it.

The android application implements the PayPal API, the Clover POS system and QR technologies to make it easy for retailers to provide their customers with a means of making secure mobile payments. The android application also Implements biometric technologies to allow merchants to correctly identify customers and prevent fraudulent transactions.

To begin the payment process a merchant uses the application to generate a QR, the customer scans the QR and authorizes the system to take the payment from their PayPal account. Merchants may also accept online payment by displaying a specially generated QR on their payment webpage. If a customer wants to make an online payment the application will require them to scan their fingerprint in order to complete the payment. At every transaction the system seamlessly collects users' data which is then analysed and used to help merchants in decision making, increasing revenue and improving customer **relationships.**

Technology used:

PAYPAL API, Clover POS, PassPrint API, Zxing QR library, Android Studio, RStudio

STUDENT PROFILE

Name: John Rogers

Project Title: Outlier Visualization in N-Dimensional Categorical Data Sets

Linkedin: https://www.linkedin.com/in/john-rogers-7391129

Project Description:

This project seeks to provide a visualization of Big Corporate Data sets (for example Server Logs) as a means of quick outlier detection for investigative purposes such as server outages or security breaches.

Humans can more easily and quickly interpret visual images than they can interpret the same data in text form. Knowledge contained in Big Data sets would be nearly inaccessible to the casual, or even moderately interested viewer, if it was not visualized.

Providing a meaningful visualization for the high-dimensional categorical case is particularly challenging for outlier detection. This is because, in high dimensionality, the data becomes sparse, and all pairs of data points become almost equidistant from one another. By using open source R and cutting edge technologies such as Tableau and IBM Watson, this project addresses the challenge of displaying high dimensional data in a meaningful and informative format that should save valuable time for users in need of information quickly.

Technology used:

R, Tableau, ShinyR, Amazon EC2, IBM Watson Data Analytics

STUDENT PROFILE

Name: Alan Rice

Project Title: GroomK9.com- online management system

Linkedin: https://www.linkedin.com/in/alanriceire

GitHub: https://github.com/Spunog

Project Description:

GroomK9.com an online management system that helps Dog Groomers run their day-to-day activities including appointment management, customer management and marketing activities.

Dog grooming makes up $5 billion of a 55 billion American Pet market and is currently growing at 4.8% per annum. In Europe there is similar growth with the European Pet Food Industry Federation (FEDIAF) estimating the Pet Market worth to be €24 billion in 2010.

GroomK9 aims to compliment the growing professionalism needs in this industry via Software as a Service (Saas) solution, which presents a RESTFul API backend using Ruby On Rails. The primary client uses AngularJS and the Google Material Design Framework and is served as a web app and is also deployed on iOS and Android via Cordova.

A fully RESTFul API backend was selected to keep the backend server and frontend clients loosely coupled allowing for future native clients and easier integration with other services. AngularJS also enabled an elegant solution for a modular design using its MVC architecture and two way binding.

Technology used:

Ruby, AngularJS, HTML5, CSS3, PostgreSQL, RESTFul API, Google Material Design Framework, Google Maps API, Cloud nary API, Facebook API, HTTParty, NodeJS, GULPJS, FullCalendar, ChartJS, Yeoman, SASS

STUDENT PROFILE

Name: Alexander Owens

Project Title: Android AI Companion App

Linkedin: https://ie.linkedin.com/in/alexanderowens93

Project Description:

The main objective is to research, design and develop an Artificial Intelligence App for Android Mobile Devices Platform and see what capabilities are available and what can be possible to achieve with the tools that Android provides.
The app will start up being simple and only over time it will rise to become more complex as additional code and algorithms get added. Portable technology is around everywhere and it's only becoming more and more popular. What if the technology had a mind on its own and become peoples personal assistant just sitting in your pocket ready to help?

The App uses Google SignIn API in order to fetch basic user details and the information like interests and activities gets learnt from the user as the user interacts with the app. All user's information gets saved into MySQL online hosted database using PHP method of handling data. The AI chooses when to become active and notify the user with new information from different API calls. The foundation of the app is set to allow easier integration of potential future functions.

Technology used:

Android SDK, Android Studio, Java, XML, PHP, MySQL, SubLime 2, Google API, SourceTree and Git.

STUDENT PROFILE

Name: Antoin Judge

Project Title: MobileTimesheet- Offsite timesheet solution

Linkedin: https://ie.linkedin.com/in/antoin-judge-30a14961

Project Description:

The main aim of this project is to develop an application which will allow the client to monitor and record the daily working hours and expenses of its employees in an efficient manner. By using Google maps API the application will accurately record the start and end points of an employee's off site travel. This will subsequently allow for a more precise calculation of employee expense claims.

The mobile application is designed specifically for use on Android devices and is developed in Java using the Android Studio IDE. A MySQL database is used to store the submitted data. The administration of the communications between the Android device and the database is handled by PHP scripts using phpMyAdmin

Technology used:

Java, PHP, Google Maps API, NetBeans, Android Studio.

STUDENT PROFILE

Name: Calvin O'Brien

Project Title: S.M.S (Social Media Shutout) - Native Android application

Linkedin: https://ie.linkedin.com/in/calvinobrien

Project Description:

The main objective of this project is to limit the main avenues for students to procrastinate. Social media shutout (S.M.S) is a native Android application which locks the user out of various social media sites on their mobile device until they have submitted their assignments to their respective student portal i.e. Moodle. Once the student has submitted their assignment they receive an automated email confirming this they will be then granted access to their social media accounts.

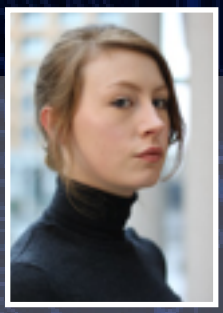
The key reason why S.M.S is developed as a native Android application is to take full advantage of the features available, one of these used in S.M.S is the ability to restrict the user's access to an application by removing the applications icon from the devices interface.

Alternatively the user could use an internet browser to access the social media site. However, with the use of Ad-Blocker software the user will not be able to access the social media site once S.M.S has been activated.

Technology used:

Android Studios, Ad-Blocker software.

STUDENT PROFILE



Name: Corrina Wynne

Project Title: Roadie - Setlist Manager

Linkedin: https://ie.linkedin.com/in/corrinawynne

Project Description:

Roadie is a responsive mobile website with an accompanying Android application that allows musicians and entertainers to create, save and edit their set lists and event information.

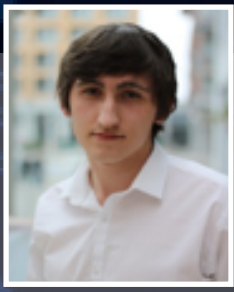
With Roadie they can create an account on the website and save their songs to their account; they can then create several customisable set lists using these saved songs and save them to their account where they can view and edit them at a later date. The Android application allows them to view and edit their existing set lists on the move, while also allowing users to create new set lists.

The project idea was formed while working closely and frequently with musicians, who more often than not will write set lists and details on scraps of paper which are often lost or destroyed. Roadie is a solution to this problem and is mainly an organisational tool which can ensure that all songs, set lists and event details remain secure and easily accessible to all potential entertainers, musicians, band members and band managers.

Technology used:

HTML, CSS, Bootstrap, JavaScript, PHP, MySQL, Android Studio

STUDENT PROFILE



Name: Darren Glennon

Project Title: Seaview golf club website - IEEE requirements specification document

Linkedin: https://ie.linkedin.com/in/darrenglennon

Project Description:

Seaview golf club haven't had a dedicated official website since their establishment in 2002. They currently have a small golf section within the local hotels website. Members are now adamant that a unique golf club website is required as the current page does not provide an adequate amount of key features. This new website aims to attract new people to play the golf course, encourage new members to join the club, whilst also enhancing the satisfaction of the current membership contingent at Seaview golf club.

The primary objective of this project was to formulate an IEEE requirements specification document for Seaview golf club's new website. This was accomplished by utilising a variety of elicitation techniques and analysis tools, these are defined in the business analysis body of knowledge (BABOK). They included a survey, a brainstorming session, three interviews, two prototypes, a requirements workshop, and interface analysis, along with an outline of acceptance and evaluation criteria. The requirements were gathered from a wide variety of stakeholders including the director of golf, senior members, visitors to the golf club, junior members, and committee members at Seaview golf club, amongst many other relevant project stakeholders. During the elicitation phase I discussed aspects such as the websites ideal design, layout, required features, navigation and page content. After all the requirements were obtained from project stakeholders, they were subsequently utilised to constitute a highly detailed IEEE requirements specification document for the client. This document should be used by a developer to construct the final website for Seaview golf club.

Technology used:

WordPress, Wamp Server, phpMyAdmin, Google Forms, PHP, SQL, HTML5, CSS, Microsoft Office, Adobe Photoshop, YouTube, Dropbox

STUDENT PROFILE

Name: Gavin Gaughran

Project Title: The Route Optimising Sidekick

Linkedin: https://ie.linkedin.com/in/gavingaughransoftwaredev

Project Description:

Planning the best route to take before beginning a journey has proven to save time and money. Companies benefit from having lower mileage expenses and faster distribution times. Employees benefit from having shorter working days as a result of completing their daily routes in faster times. It can however be very time consuming to try and pre-plan a multi-destination route in an optimal order.

When planning a personal trip with many destinations, it is obvious the less time spent travelling and the more time spent enjoying the destinations, the better. The trouble is, trying to figure out the best route to take or knowing the best way to plan your journey.

The Route Optimising Sidekick is a route optimisation tool using genetic algorithms to shorten your journey. When planning a route with multiple destinations, this tool allows users to enter their destinations and our tool will optimise the route. Just enter your destinations in any order and our tool will do the hard work for you and will return the shortest and most time efficient route to take.

Technology used:

Google Maps API, ASP.NET, HTML, JavaScript, JQuery, C#, Visual Studio

STUDENT PROFILE

Name: Glen Ward

Project Title: **New Age of the Dead – Unreal Engine Survival Horror Game**

Linkedin: https://ie.linkedin.com/in/glenward

Project Description:

New age of the dead is a first person survival horror game, it uses the Unreal Engine 4 potential in beautiful visuals, architectural visualisations and simulations to create a terrifying environment for the player. Incorporated for single and multiplayer modes using Steam so players can join other servers to play together.
There are three versions of AI incorporated with behaviour trees in the game which have different levels of pathfinding and intelligence. All versions will have a random location generator, roam the map and search for the player and if player is seen they will attack. The online multiplayer uses Steam to create servers which can be joined from another instance of the game so two people can play together from different locations.

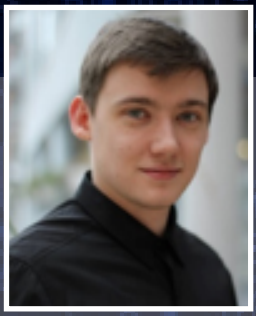
The game has a variety of other functionality which includes:
- Login/Registration – Made using SQL/PHPMyAdmin
- Multiplayer – Creates the servers through Steam
- Zombie AI –Artificial intelligence uses behaviour trees which help determine the best path to find the player.
- Cinematics – Gives more effect of the environment and situation to the player
- Leaderboard – Users can store their score and compare against other competitors

Gameplay features:
- Timer – The set amount of time the player has till the zombies overrun the level
- Inventory system – For the weapons scattered throughout the game
- Health pickups – If the player is attacked they can regain their health
- Pickup keys – To advance through the game and progress through the story
- Mini Map – Players can view where enemies is on the map so they can avoid and judge where to go

Technology used:

Unreal Engine 4, Blender, SQL, PHPMyAdmin, Mixamo Fuse, Steam

STUDENT PROFILE



Name: Graham Robinson

Project Title: Captain Ecks - Isometric Adventure Game

Linkedin: https://ie.linkedin.com/in/graham9robinson

Project Description:

Captain Ecks is a pirate themed action adventure game unlike anything on the seven seas…mainly because it's on land. You, the player, will take control of the titled character Captain Ecks as you battle your way from island to island, plundering for loot to sell for new upgrades and weapons. Created using unreal engine, Captain Ecks uses blueprints to adapt to the player's choice of difficulty level, determining spawn rates and health percentages that will in turn have a great impact on how you will approach the game.

This project includes key elements such as;

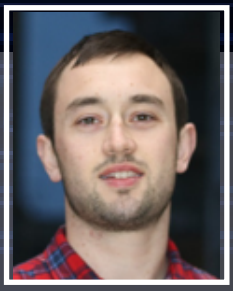
- Artificial intelligence in the form of two different types of enemies that will actively pursue and attack the player.
- Character abilities. As the game progresses players will be able to purchase abilities to use during gameplay, once an ability has been activated a short "cooldown" time will need to take place before that ability can be performed again.
- There is a Loot system within Captain Ecks, during gameplay the player can collect coins which are then converted into "Loot", this loot can be spent in the shop on upgrades such as better weapons, more health, new abilities, etc.

Captain Ecks provides a fun and challenging pirate adventure, with abilities and a loot system adding to the strategy involved with playing the game.

Technology used:

Unreal Engine 4, Adobe Fuse, Blender, Adobe Photoshop

STUDENT PROFILE



Name: Jordan Daly

Project Title: StuRevu – College course reviews by students

Linkedin: https://ie.linkedin.com/in/jordandaly2

Project Description:

The aim of this project is to allow prospective students to be able to access word of mouth advice from current students and graduates. StuRevu aims to provide insider information on all types of third level institutions in Ireland, from Universities and Institutes of Technology to Colleges of Further Education.

StuRevu allows for high level overview reviews of a third level institute, reviews of clubs and societies, reviews of specific courses, and even reviews of specific modules. These different types of reviews facilitate information sharing of the full education experience on a unique granular level.

The key features of the project include;

- Nested data model of colleges - courses - modules
- Read & Create reviews
- Calculations of Average rating & Counts of related entities (courses, modules, reviews etc)
- Flag review as Spam & Vote review helpful
- Map of third level institutes
- Social login with Facebook and Linkedin
- Add comment to Review & Reply to comment
- Save favourites
- Subscribe to updates (push notifications)

Technology used:

Android Studio, Java, XML, Parse, JavaScript, MongoDB, Google Maps API, Facebook API, LinkedIn API

STUDENT PROFILE

Name: Keith Russell

Project Title: YourDiabetes

Linkedin: https://ie.linkedin.com/in/keithprussell

Project Description:

The main aim of the project is to show that by combining SQL and Mashup technologies, it can allow people with diabetes to effectively manage their condition. Using Microsoft Visual Studio, C# and Xamarin tools, the technology can be available on the go for mobile users.

The application will allow the user to log their blood, track their fitness and log their food in one area. All this data will be stored in a SQL database and secured using 128 bit technology. The latter part is important for patient technology, specifically for mobile. Initially the project will use MapMyFitness for managing fitness and MyFitnessPal for food diary and in the future there will be availability for more options, which will allow the application to grow.

Technology used:

SQL, Microsoft Visual Studio, C#, Xamarin for Android and Mashup Technology

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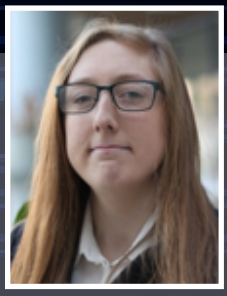


Name: Kellie Hughes

Project Title: Shifts – The Rostering App

Linkedin: https://ie.linkedin.com/in/kelliemjhughes

Project Description:

Shifts was created to close the divide in communication between employees and employers of roster based businesses whether big or small. Shifts is a website, developed using PHP, HTML, CSS and Bootstrap. The application has two types of end users, the employees and the employers.

Employees using the application can:
- View current and previous rosters of their place of employment
- Request shift changes
- Request days off
- Chat to other members of staff.

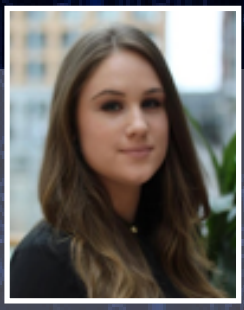
In addition to the functionality given to the employees, the employers can also:
- Add new rosters to the website
- Manage requests from employees
- Add new staff members to the system

In researching the potential idea it was clear that there was a gap in the market for this type of application. After proposing the idea to both end users it was agreed that this application was a needed service.Shifts integrates a cloud based database and will also deployed the same way which caters to organizations which are making the transition to Cloud based operations. The possibilities in Shifts is endless as the website can be available to all businesses working with shift work. This could be made available to colleges, hospitals, schools and any other organization where employees work on a roster based system. It could also be further developed to have a mobile application, which can be made available for download through the Apple Store or Google Play Store.

Technology used:

HTML5, CSS, PHP, JavaScript, AngularJS, Heroku, Backend and Git.

STUDENT PROFILE



Name: Kelly McGuinness

Project Title: There's No Place Like Home (FPS style game)

Linkedin: https://ie.linkedin.com/in/mcguinnesskelly

Project Description:

A weapon based combat experienced through the eyes of the protagonist. Created using the Unity 3D engine.

Ten years ago you made a deal with a demon. The day has come and now he's collecting his end of the bargain. He has come to your home town to take your soul to hell. The only loophole- the contract, which states if you defeat him and his army, the soul is yours to keep. You take the only weapon you have and pray it's enough.
Destroy waves of intelligent enemy AI that use A* Pathfinding algorithms to track their target. Pathfinding updates as you move so you can run but cannot hide. Defeat these and take on the Necromancer which is powered by the RAIN AI engine. The Necromancer channels dark power from the demonic gods of the underworld and destroys the bodies and souls of all who stand in his way.

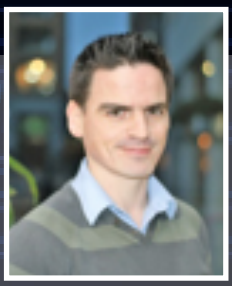
RAIN's movement, behaviour and pathfinding systems work together to control Character motion. It uses waypoints and behaviour tress to create patrol and detect paths and help to tie movement to behaviour to create hiding, attacking, chasing etc.

Fail in your only chance and you'll be taken to hell, and you'll realise, there really is no place like home.

Technology used:

Unity, Unity Asset Store, MonoDevelop, C#, Javascript, RAIN AI Engine

STUDENT PROFILE



Name: Kieran Shine

Project Title: StarGaze- Android mobile app

Linkedin: https://ie.linkedin.com/in/shinekieran

Project Description:

StarGaze is an Android mobile app targeted at amateur Astronomers wishing to plan and record their observing sessions. It will enable users to plan sessions by combining a mapping function with weather forecasting to tell the user where and when is the best time to observe the night sky. The application will default to the user's current location when retrieving weather data but will also allow the user to select another location that they may plan future sessions. Users will also have access to astronomical data relevant to their location and selected viewing times where they can find out what objects and phenomena they can expect to see on a given night.

Users will be able to record information about what they have seen so that they may be able to make more informed decisions about future sessions as well as building a knowledge base from their observing experience. It is envisaged that this application will give users a tool with which to improve their observing experience and also make the wonders of the night sky accessible to people of all levels of interest.

Technology used:

Android Studio, Ruby Mine, Google Maps API, OpenWeatherMap API, Astronomy API.

STUDENT PROFILE

Name: Kyle Mc Galey

Project Title: Abyss- 3D action adventure game

Linkedin: https://ie.linkedin.com/in/kylemcgaley

Project Description:

Abyss is a 3D action adventure game about cave exploration which involves testing wits and skill against enemies while under a time limit. Abyss is a graphically intensive game with an immersive atmosphere that will captivate players. Using Unreal Engine 4 the games graphics are up there with some of the best available to new developers.
A brief synopsis of the game:

The player will need to achieve their goals within the world and escape with their life as the cave dwellers do not like their home being invaded.

What sets this game apart is its simplicity, the game can be played by just about anyone yet it still conveys stunning graphics which is not the norm for game development in its current era.

Abyss could be classed as an indie game with high scale visuals.
The characters in the game were designed using Adobe fuse, and the skeletons were rigged using Mixamo then later imported into Unreal Engine

The game can be played by anyone and there is a massive opportunity to expand the world of Abyss to make it even bigger and better.

Technology used:

Unreal Engine 4, Blueprints, 3DS Max, Mixamo, Adobe Fuse, Audacity.

STUDENT PROFILE

Name: Michael Kilfeather

Project Title: Equilibrium – A Unity3D game

Linkedin: https://www.linkedin.com/in/michaelkilfeather

Project Description:

Equilibrium is a third-person stealth shooter RPG (role-playing game) developed with Unity 5 and C#. The game is set in a cyber-punk themed dystopian universe where the corrupt fictional military organisation, Metacorp, has imposed martial law. You play a vigilante who sets out on a personal mission to takedown the organisation. The game is open-ended in nature, allowing the player to carry out a variety of missions in no particular order. These missions range from traditional stealth-based missions to more RPG-like quests such as item retrieval or NPC encounters.

Through the use of Dialogue System for Unity, the player can interact with NPC's which may trigger missions which are added to the player's Mission Log. Before embarking on missions, the player can explore the hub-world where they can enter shops and purchase weapons / upgrades. The player can also purchase and upgrade skills through the use of the skill tree. The player will encounter enemy NPC's during missions. These enemy NPC's use behaviour trees, powered by RAIN AI, to determine how they interact with the player through Visual and Audio sensors.

Technology used:

Unity 5, C#, RAIN AI, Dialogue System for Unity, Microsoft Visual Studio, InControl, Mixamo Fuse, Photoshop CS6, ProBuilder Basic

STUDENT PROFILE

Name: Natalie Edward

Project Title: Missing – A geolocation missing persons application

Linkedin: https://ie.linkedin.com/in/natalieedward

Project Description:

Missing was developed in response to the increase in the media of reports on missing people. Ireland alone has seen an 80% increase of reported cases over the last decade.

The system is a hybrid mobile application with the primary purpose of assisting in the search and location of a missing person through public interaction and contribution.

Developed using Ionic framework, AngularJS and Apache Cordova. AngularJS utilises HTML as the template language and allows for extension of HTML's syntax to express the application's components.

Backand, a backend-as-a-service which is tailored for AngularJS and the Ionic framework will be used to provide the database functionality. It gives access to server side JavaScript code execution, allowing for functionality which depends on a secure execution environment.

The main feature of the application is the push notification functionality based on the location of a user. When a device enters an area where a person was reported missing then that device will receive a push notification notifying them to look out for that person. This is done using geolocation and geofencing technologies.

Additionally the application gives the user the ability to report sightings, capture an image of a sighting and share information relating to an active case through social media.

Technology used:

HTML5, SCSS, AngularJS, JSON, Backend (BaaS), Geofencing, Cordova Social Sharing API

STUDENT PROFILE

Name: Niall Whelehan

Project Title: Allergen Advice

Linkedin:
https://ie.linkedin.com/in/nwhelehansoftwaredeveloper

Project Description:

As the father of an allergy sufferer, I am very aware of the trials and tribulations a person afflicted by food allergies can go through when it comes to something as mundane as the daily shop. Allergen Advice aims to be a quick reference for food laws surrounding food labelling and the differences from country to country. (USA has 6 items less than the EU that must be displayed)

The application will have a simple to use cheat sheet of all the common food allergens, images and their translations for dining abroad.
The app also includes a community aspect where users can recommend allergy friendly restaurants in specific locations. The app user can view the recommendations and a breakdown of the number of people who recommended the restaurant specific to their allergies.

If you are passing nearby a restaurant that was recommended by a user with the same allergy, you will receive an alert.

Technology used:

Java, Spring-MVC, Groovy, Bash, MongoDB, Android, Amazon EC2, Amazon DynamoDB, Retrofit, Gradle, Bitbucket, Git, Apache Tomcat, Charles Proxy, Linux, Intellij Idea, Postman, Google Maps, Google PlacePicker, Google GeoFencing, Android Wear, Material Design, Wiremock, Cucumber, JUnit.

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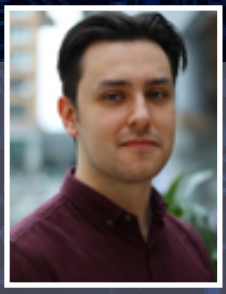

Name: Ricardo O'Hara Camones

Project Title: Blood Moon - A Unity 5 Game

Linkedin: https://ie.linkedin.com/in/roharacamones

Project Description:

Blood Moon is made with Unity 5 and is a challenging 2D cinematic platformer, with adventure and RPG (Role Playing Game) elements set in a pixel Gothic world, inspired by Lovecraftian horror, along with modern games such as Dark Souls and Bloodborne.

The game is following the player character, "The Druid" where you'll explore a dark fantasy world scattered with varying types of creatures created with Photoshop CC and Aseprite. These enemies will have their own AI using unique attacks and defenses to add variety and challenge to gameplay. The player will increase their health, magic and damage levels by gaining XP (experience points) to level up through tasks such as collecting rare items, and defeating enemies. This is essential to progress further to face tougher enemies and bosses.

The combat is more about strategic, thought-out play but still relies on perfect twitch reflex or muscle memory from retro games. It involves using weapons (blades), blocking (shield) and abilities (magic) along with "The Druid's" mobility, such as double jumping and rolling to maneuver around the world and enemies.

Technology used:

Unity 5, C#, MonoDevelop, Photoshop CC, Aseprite

STUDENT PROFILE

Name: Sam Gormley

Project Title: Android app - Yellow Umbrella Tours

Linkedin: https://ie.linkedin.com/in/samgormley

Project Description:

Android app for tourists and tour guides, with built in rating and feedback systems. Unique features include chat with the active tour guide, geofencing notifications for landmarks, statistics reporting allowing for analysis of data on the success of the tours.

The chat feature serves to connect the tourist with their guide, allowing them to feel comfortable fielding any questions without having to vocalise them, as well as allowing them to find a tour if they have wandered off from one or missed a stop, and will be implemented using Intercom.io

Tourists can book private and paid tours using the Paypal MPL to pay. Geofencing is used to alert users that they may be near a landmark from a tour or near a start spot for a tour. Google Maps will be used for basic navigation and the plotting of geofencing co-ordinates. The rating and feedback systems will work by sending the data entered within the app back to the database.

Technology used:

Android, Java, MySQL Workbench, Google Maps API, Paypal MPL, intercom.io, geofencing.

STUDENT PROFILE

Name: Suzanne Fagan

Project Title: BagItIreland.com Ensuring straightforward appliance shopping.

Linkedin: https://www.linkedin.com/in/suzannefagan

Project Description:

BagIt provides consumers with product specifications that retailers fail to display with a simple search or scan. Consumers will be given specifications, different retail prices and location of each retailer. Products are often displayed with minimal information such as price and energy rating - the difference between products is often unclear and sales staff are not always experts on the products.

Displaying QR codes will allow customers to instantly retrieve all product specifications and reviews. The system allows easy and clear comparison of products. It can also be used outside of stores by searching for the product you are looking for. Once the customer has chosen their product, BagIt will display all retail prices for that product and where these retailers are located. Consumers can instantly find the best price for their chosen product that is closest to them.

Technology used:

Python, Django, HTML, CSS, Ubuntu, Google Maps API, Web QR API, JavaScript, Bootstrap.

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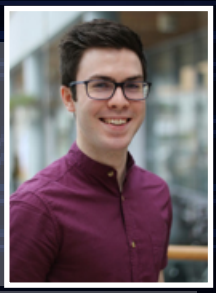


Name: Brian Murphy

Project Title: PetPal - hybrid application - reuniting missing pets with their owners.

Linkedin: https://ie.linkedin.com/in/brianmurphy92

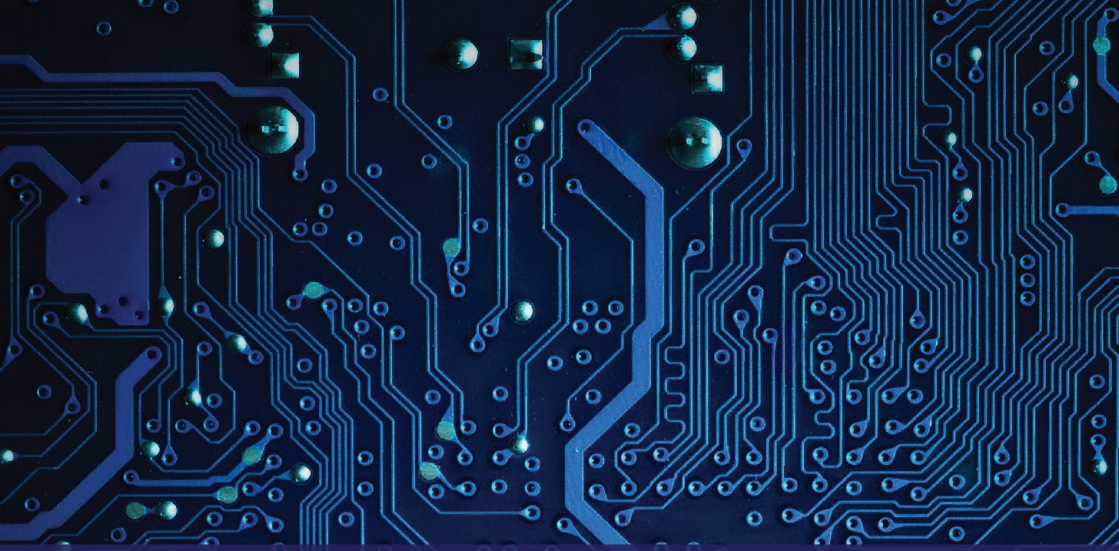
Project Description:

The aim of this project is to allow people who find missing pets to communicate directly with the owner in an instantaneous manner by visiting a URL located on the pets collar. A person that finds a pet can send share the geo-location with the owner using Google maps API and also send instant messages which are both notified to the owner via push notifications.

As the application core is built using Meteor.js it is real time by default which will allow users to navigate throughout the app and manage data with real time app updates to the client. Pet owners can log in and manage their pets profile through a ported android application with a mobile first user interface designed with Ionic. When any changes are made the updates are propagated to the client using live querying of the database which is accomplished by using full stack database drivers.

Technology used:

Meteor.js, MongoDB, Amazon Web Services, Google Maps API, Facebook API, Apache Cordova, Ionic, Animate.css.



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