SETU
Ollscoil Teicneolaíochta an Oirdheiscirt
South East Technological University

SETU WATERFORD COMPUTING PROJECT EXPO '24

PROJECT BROCHURE

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Welcome

It gives me great pleasure to welcome you all to our Computing Expo 2024.

This year's Expo is kindly sponsored by Kargo and I would like to thank them and in particular Mick O'Brien and John Stacey for their generous support, it is great to have one of the world's leading ad tech companies sponsor this important occasion in our academic calendar.

This year's event is expanded in scope with some interesting opportunities, activities, and events throughout the morning. You will see demonstrations of a diverse array of projects that reflect the breadth and depth of the knowledge acquired by our students from our BSc (Hons), MSc & HDip Computing programmes. These projects reflect the creativity, hard work, dedication, and innovation gained by our students, whilst studying in our courses. We are immensely proud of their achievements, and we look forward to sharing their project work with you, as it marks a significant point in their transition from academia into industry.

To our students, I say well done to you all, the quality of your projects is a testament to your time with us and I have no doubt that the knowledge and skills gathered in your respective courses will facilitate you to embark on a successful career in Computing.

This year's Expo will once again will be complemented with an Industry Showcase, where our external partners, who play a critical strategic role in our department get a chance to take a stand, provide guidance and knowledge on internships, potential jobs and other opportunities to our graduates.

To our Industry partners, I welcome you all and thank you for your support of our department over the past academic year. Today, not only will you see demonstrations from over 100 of our undergraduates and postgraduate final years students, but also get a chance to delve into the intricacies of their projects and interact with our students to see the journey they have been on and how their time here at SETU has shaped them as ICT professionals and inspired them to develop some of the most creative and innovative software development projects ever seen on campus.

In addition, I would like to thank the companies that are presenting awards this morning, your recognition of the quality of the projects developed by our students is a stamp of approval that is worth so much to us and the recipients. These awards will be presented to students by Sun Life Financial, Red Hat, Dataworks & UNUM to recognise their excellence in creativity, innovation and design, peer support and groundbreaking approaches in their final year projects.

Finally, I would like to thank Lucy White, Noelle Dalton & Eleanor Reade for the immense work they have put in to ensure this year's Expo is a success, your dedication to detail and delivering excellence is very much appreciated by all at SETU.

Enjoy the day.

Dr TJ Mc Donald,
Assistant Head of Computing & Mathematics Department,
South East Technological University (SETU)

Welcome from Lucy White, the FYP Co-ordinator

It is with great pleasure and deepest pride that we in the Computing and Maths department at SETU Waterford, present to you, our colleagues, students and industry partners, the outstanding work of our final year in computing students.

The final year project allows students to demonstrate what they have learned over the course of their studies, integrate their knowledge in a capstone project, and produce a significant piece of work to ultimately showcase at the Computing Project Expo.

As the students have studied across a range of different programmes that specialise in their own distinct disciplines and subject areas they have cumulatively produced an extensive catalogue of innovative and creative projects that range in type, discipline and complexity. This brochure/online showcase will help you to easily navigate the final year projects by course or subject area. You're in for a treat!

A final word to our students …

A heartfelt congratulations to you all on completing your final year project. I know the road was sometimes long but your consistent work, drive, determination and unwavering commitment to the process has brought you to this point.

The Computing Project Expo is your chance to showcase your project. We are delighted to celebrate with you and we are looking forward to seeing your hard work come to fruition.

Enjoy and have fun!

Lucy

Welcome from Colm Dunphy, the HDip Project Co-ordinator

The Higher Diploma in Computer Science (online) was the first fully online programme from WIT, now SETU. Students graduate as full-stack oriented developers. The programme was designed to be delivered online, with an emphasis on student experience, engagement, and building a learner community promoting peer learning. The programme has pioneered the innovative Agile Semester approach to delivery. This showcase of projects presented in April 2023 highlights the diverse range of graduate capabilities from this programme. Students on the programme complete their studies while on a six month work placement. During this time they complete a capstone project. Students and graduates continue to be highly sought after. If your company is interested in mentoring a student on work placement please contact joan.mangan@setu.ie

This year projects include native android app development, web apps, and a combination of both, in the one project. We also saw some leverage hybrid and progressive web approaches to building both web and mobile apps. There were projects focusing on DevOps, SysOps, creating cloud CI/CD pipelines, testing gradles, and IOT and physical computing projects involving hardware sensors with web and mobile interfaces. We had workplace projects leveraging the Microsoft Power platform, Amazon's AWS, MS-Azure, and Red Hat OpenShift. A number of workplace projects are private (the details of which are withheld under NDAs). A number of projects contributed to the open source community including tutors.dev, and Strimzi. We also had dashboard and data analytics projects. Student projects use multiple APIs, and are deployed in different environments (AWS, AZURE, OpenShift).

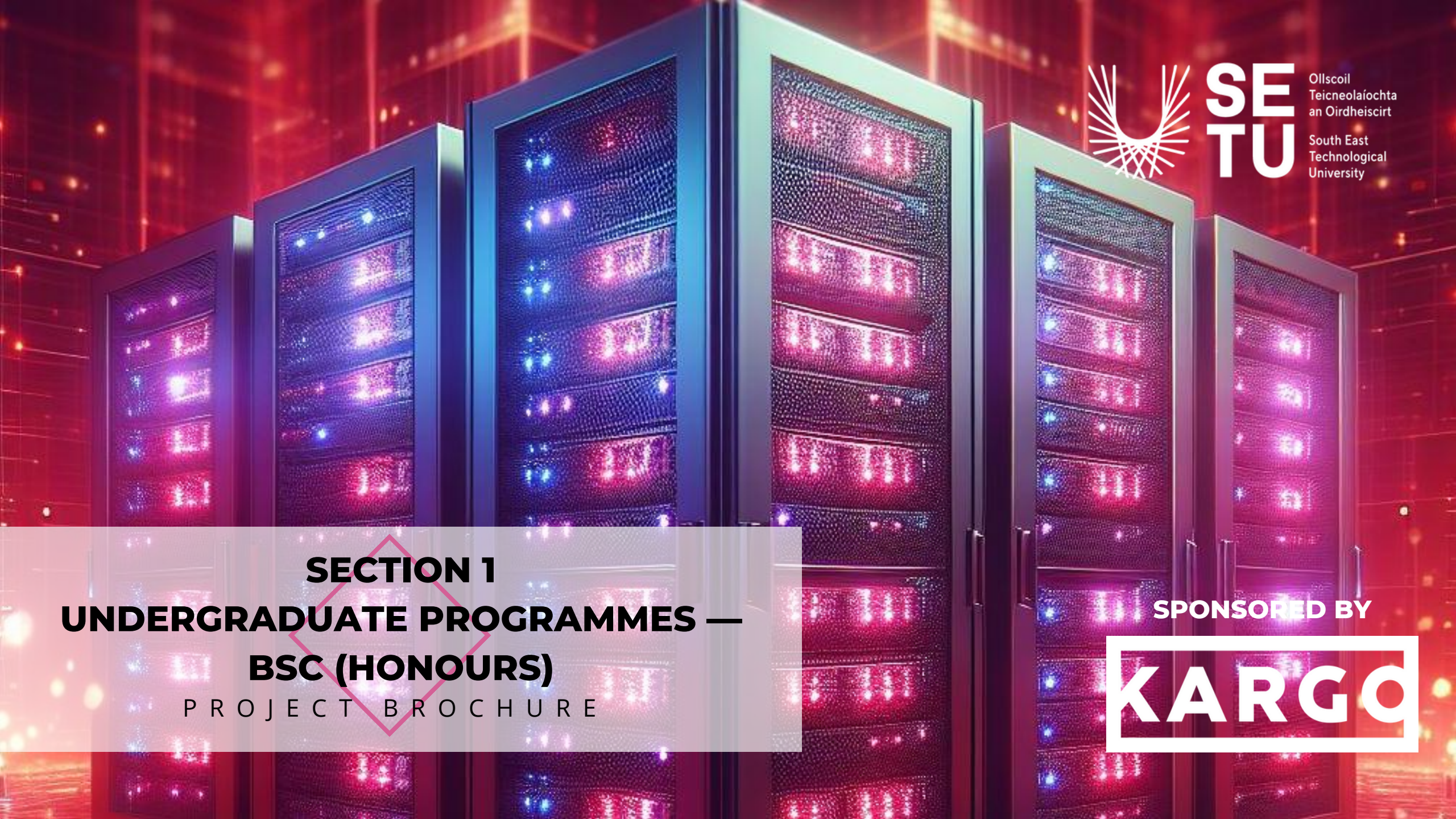
Within the HDip section of this booklet, student thumbnails link to project videos, student names link to the project page. The project pages summarise the project and includes links to github, Youtube and web pages for the project, deployment details, etc. QR codes for each project are also provided.

In summary, we are often asked what our course is about and what can you do after completing it? Well, this showcase answers both questions through our students' hard work. Enjoy the diversity, innovation and creation. From the entire team, we would like to thank the students for their work over the last few years, and we wish you every success which you will no doubt have in the future.

Regards,
Colm Dunphy

Projects by Programme

Projects by Type / Subject Area



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SECTION 1
UNDERGRADUATE PROGRAMMES — BSC (HONOURS)

PROJECT BROCHURE

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BSc (Hons) in Applied Computing

The BSc (Hons) in Applied Computing is a 4–year ab–initio Level 8 programme.

The aim of the BSc (Honours) in Applied Computing is

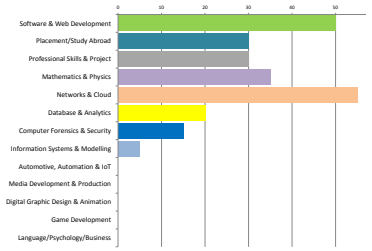
to provide a broad but focused, curriculum of computing and software development concepts. This is complemented by the study of particular problem domain areas (e.g. Games Development, Cloud Computing). The intention is for the student to not only learn the technical skills, but also to form an appreciation for the context in which the technologies are used and the processes involved in successful development.

At the start of their study, the student will be introduced to a broad range of subject material, with an emphasis on applying the scientific method. Later, the student will be exposed to challenging and rigorous study of system development (from analysis to design to implementation and verification) and apply these principles to small to medium sized systems. The student will be given a foundation in an application area of their choosing (from Media Development, Computer Forensics & Security, Cloud Infrastructures, Automotive & Automation Systems, Game Development, and the Internet of Things) and gain strong proficiency in developing systems in this area.

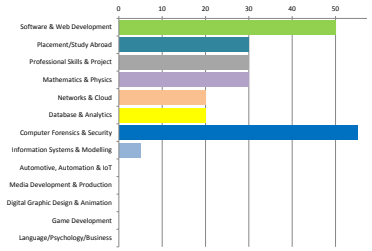
It is important that the student be conversant with current trends and paradigms when they enter the job market. However, it is equally important that they will have transferable skills that will facilitate their career progression (e.g. project management, communication skills). To this end, throughout their study, the student will be introduced to these topics so that the practice of these skills will occur in a seamless and integrated way throughout the program.

A graduate of the BSc (Honours) in Applied Computing will be an enthusiastic and confident practitioner, comfortable with their ability to learn, and adapt to the ever-changing world of computing. They will be ready to embark on a challenging and rewarding career either in research or in the computing industry.

The breakdown of course credits across the four years on each specialism is illustrated by the following charts.

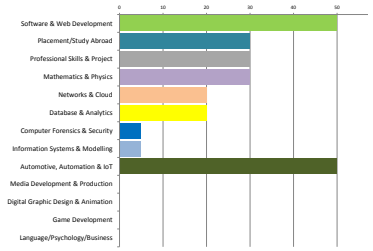


Networks & Cloud

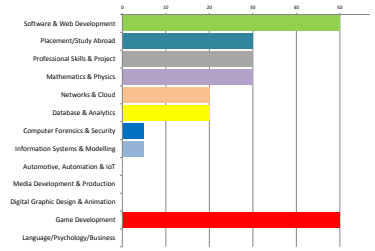


Computer Forensics & Security

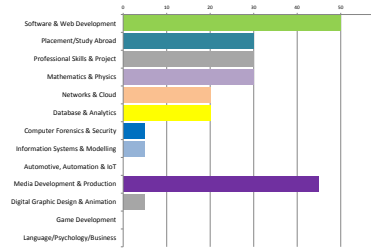
Automotive & Automation Systems



Internet of Things



Game Development



Media Development

AccessiVote

Not presenting

Academic Title

Referendum As-a-service for Inclusive Voting Through AWS Serverless Architecture

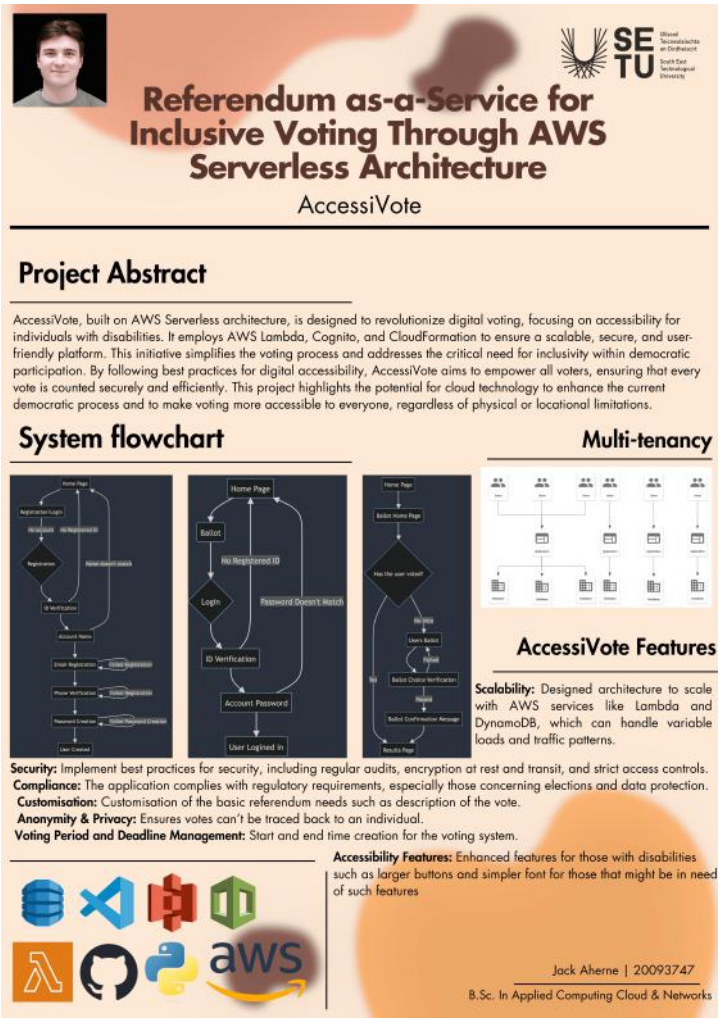
by Jack Aherne

Project Areas

- Cloud Computing
- Software Development: (Back End / Web)

Project Supervisor
John Rellis

AccessiVote, built on AWS Serverless architecture, is designed to revolutionize digital voting, focusing on accessibility for individuals with disabilities.
It employs AWS Lambda, Cognito, and CloudFormation to ensure a scalable, secure, and user-friendly platform. This initiative simplifies the voting process and addresses the critical need for inclusivity within democratic participation. By following best practices for digital accessibility, AccessiVote aims to empower all voters, ensuring that every vote is counted securely and efficiently.



Technologies: AWS, Cloudformation, Python, Trello, Cognito, Github

https://sites.google.com/view/20093747jackaherne/home

Face Attendance System

#1 / TL252

Academic Title

Faceguard: Revolutionizing Attendance with Cutting-edge Face Recognition Technology

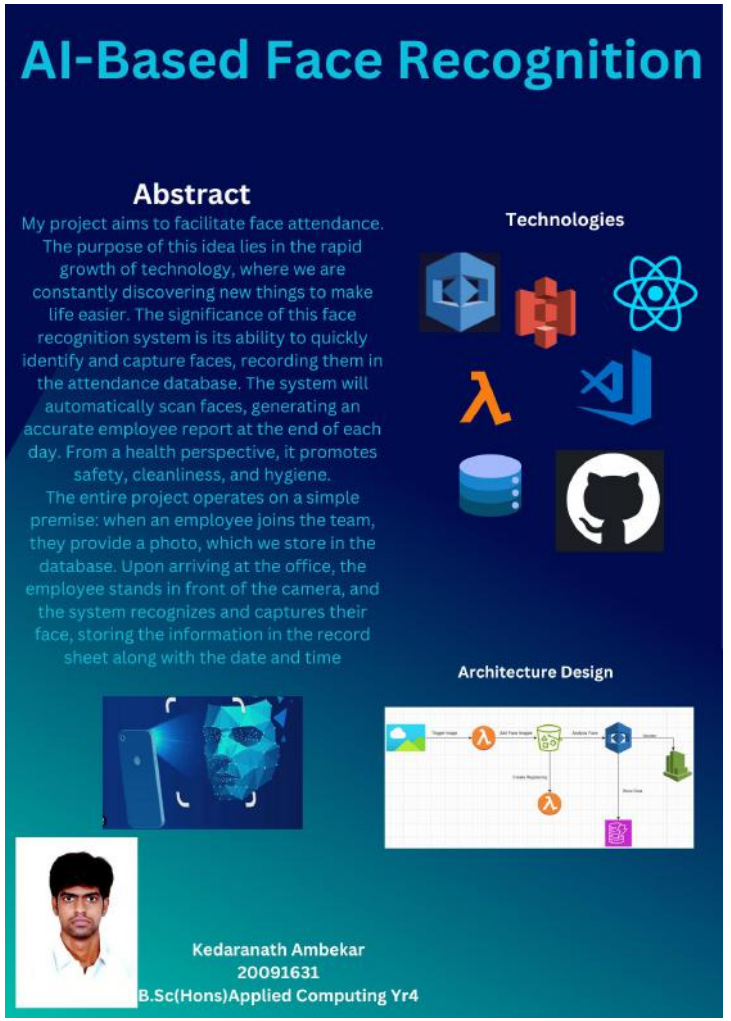
by Kedaranath Ambekar

Project Areas

- Cloud Computing

Project Supervisor

Sinead O'Neill



My final year project uses face recognition technology to record attendance. The system will automatically scan faces, generating an accurate employee report at the end of each day.
The entire project operates on a simple premise: when an employee joins the team, they provide a photo, which is stored in the database. Upon arriving at the office, the employee stands in front of the camera, and the system captures their face and compares against employee records. Attendance sheet is then updated with data and time.

Technologies: AWS S3, DynamoDB, Rekogintion, Lambda, JavaScript

https://github.com/kedaranathambekar/fyp-landingPage

VuLPES

#2 / TL252

Academic Title

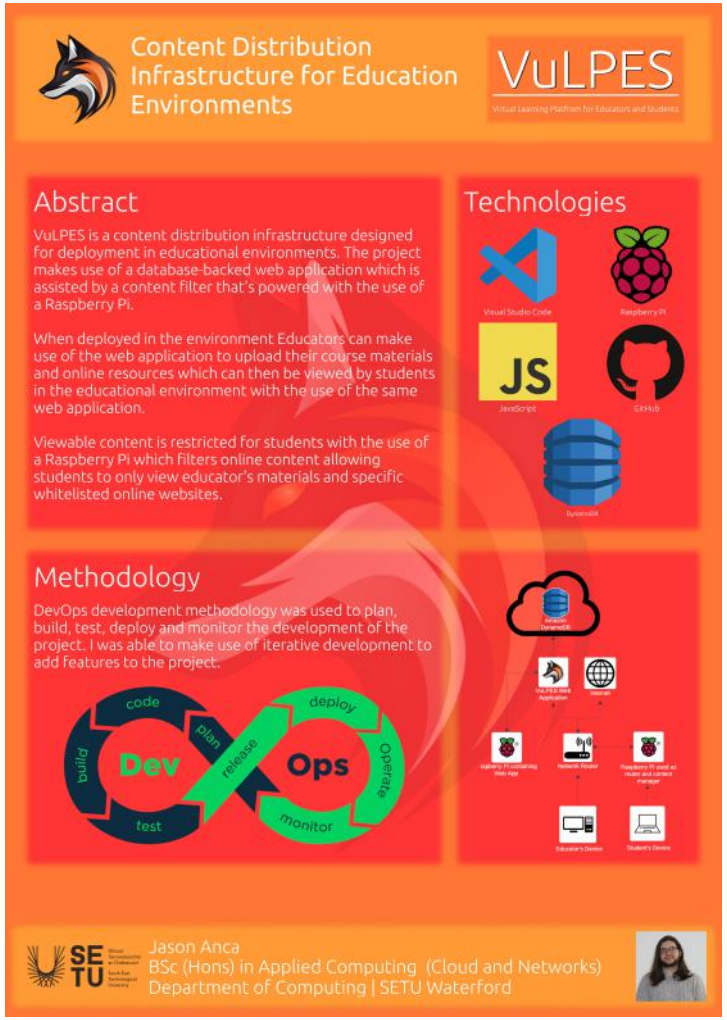
Content Distibution Infrastructure for Education Environments

by Jason Anca

Project Areas

- Cloud Computing
- Internet of Things
- Software Development: (Web)

Project Supervisor
Richard Lacey



VuLPES (Virtual Learning Platform for Educators and Students) is an infrastructure that's deployed in a learning environment. The infrastructure has both software and hardware deliverables, where a Web App is deployed on low-powered hardware in the aforementioned learning environment.
The idea takes inspiration from "Moodle", where contented is hosted and displayed for students in the environment to view and interact with. The idea with VuLPES is that content such as a YouTube video can be uploaded for students to view during a lesson period and can access the video through the Web App.

Technologies: JavaScript, IPTables, DynamoDB

http://jasonanca.com/vulpes

Auto Ethernet Security: A Comparison

#3 / TL252

Academic Title

Comparative Analysis of Automotive Ethernet Security Protocols

by Alexander Berbenitskiy

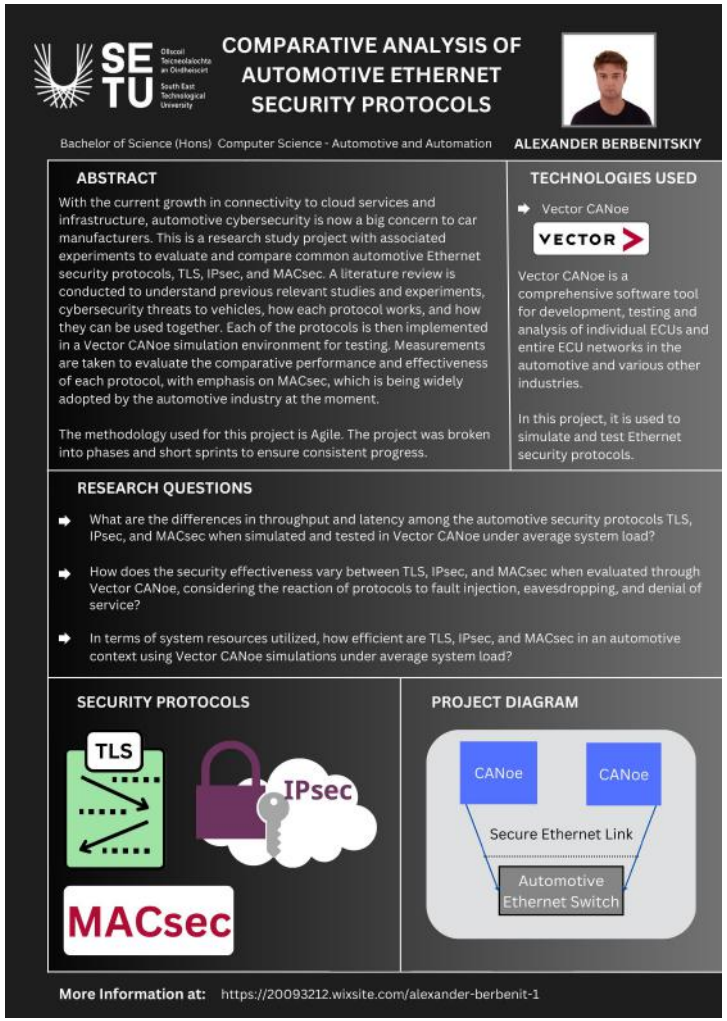
Project Areas

- Automotive and Automation
- Computer Networks
- Computer Security

Project Supervisors

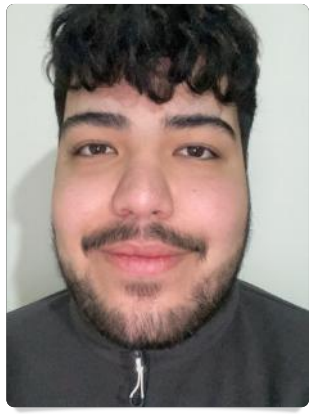
Joe Daly, Sonya Hogan

With the current growth in connectivity to cloud services and infrastructure, automotive cybersecurity is now a big concern to car manufacturers. This is a research study project with associated experiments to evaluate and compare common automotive Ethernet security protocols, TLS, IPsec, and MACsec.
A literature review is conducted to explore relevant studies, experiments and cybersecurity threats to vehicles. Each protocol is then implemented in a Vector CANoe simulation environment for testing and analysis to evaluate the comparative performance of each protocol, with emphasis on MACsec.



Technologies: Vector CANoe - Ethernet

https://20093212.wixsite.com/alexander-berbenit-1



EduHost

#4 / TL252

Academic Title

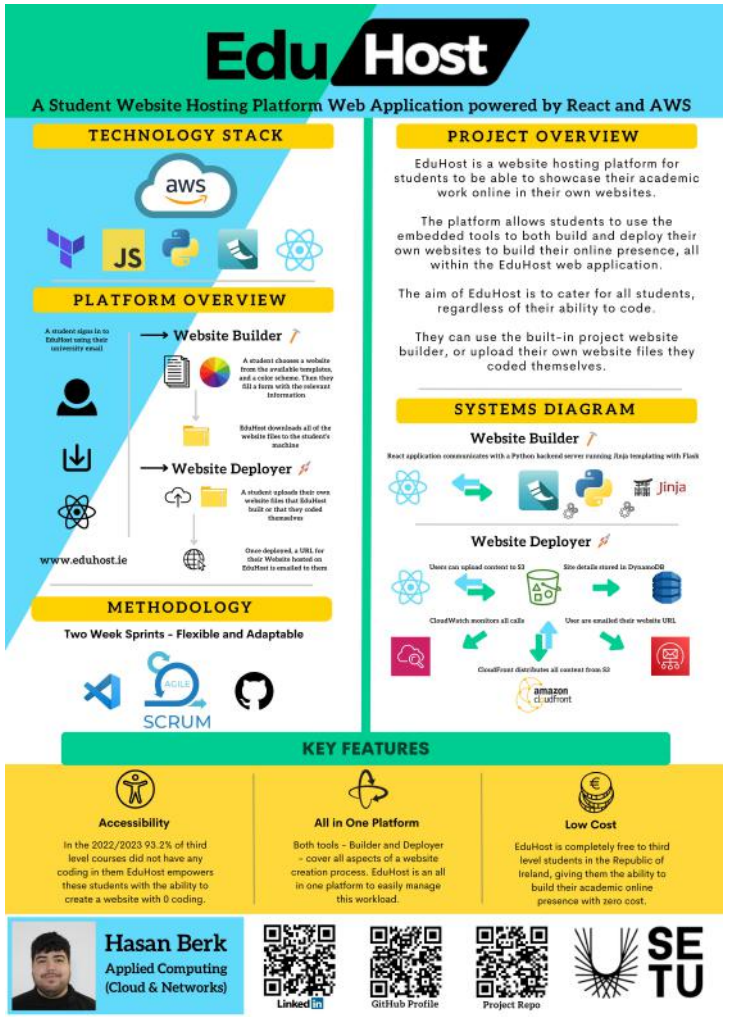
EduHost - A Student Website Hosting Platform Web Application Powered by React and AWS

by Hasan Berk

Project Areas

- Cloud Computing
- Software Development: (Back End / Front End / Web)

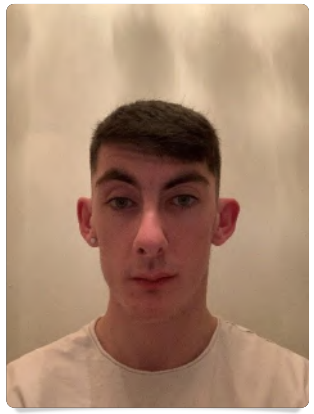
Project Supervisor
Denis Flynn



EduHost is a website hosting platform for students to be able to showcase their academic work online in their own websites. The platform allows students to use the embedded tools to both build and deploy their own websites to build their online presence, all within the EduHost web application.
The aim of EduHost is to cater for all students, regardless of their ability to code. They can use the built-in website builder, or upload their own website files they coded themselves to deploy their websites. EduHost is powered by modern cloud technologies, to provide a fast and seamless experience.

Technologies: React, JavaScript, Python, Amazon Web Services, Terraform

https://projectshowcase.eduhost.ie



Automotive Lane Correction Assist

#5 / TL252

Academic Title

Lane Correction Assistance, an ADAS Concept

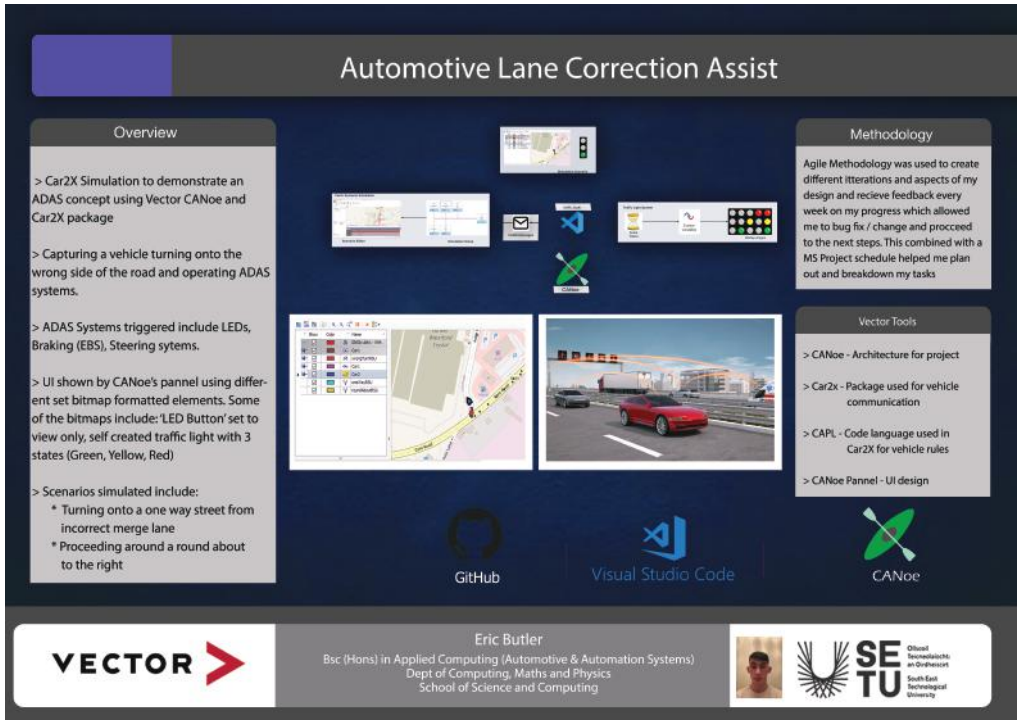
by Eric Butler

Project Areas

- Automotive and Automation

Project Supervisor

Brendan Jackman



Incorrect Direction Assist is a simulation project based on the CANoe software architecture that will detect a vehicle going the incorrect way through a route and deploy aids to correct this based upon current ADAS systems. The ADAS systems simulated here include EBA (Emergency brake assist), Blinking LED from a Dashboard (Simulate RADAR sensors), LA (Lane Assist). UI operated by the CANoe pannel system using Bitmap formatted issues that include different states of the bitmaps to represent LEDs blinking or a traffic light system.

Technologies: CANoe, CAPL, Lucid Chart, Vector Testing

https://ericdebuitleir.github.io/FYP-WebPage/

Goblin Gadgets: A Turret Tale

#6 / TL252

Academic Title

Top-down Auto-shooter Wave-based Survival Godot 4 3D Game

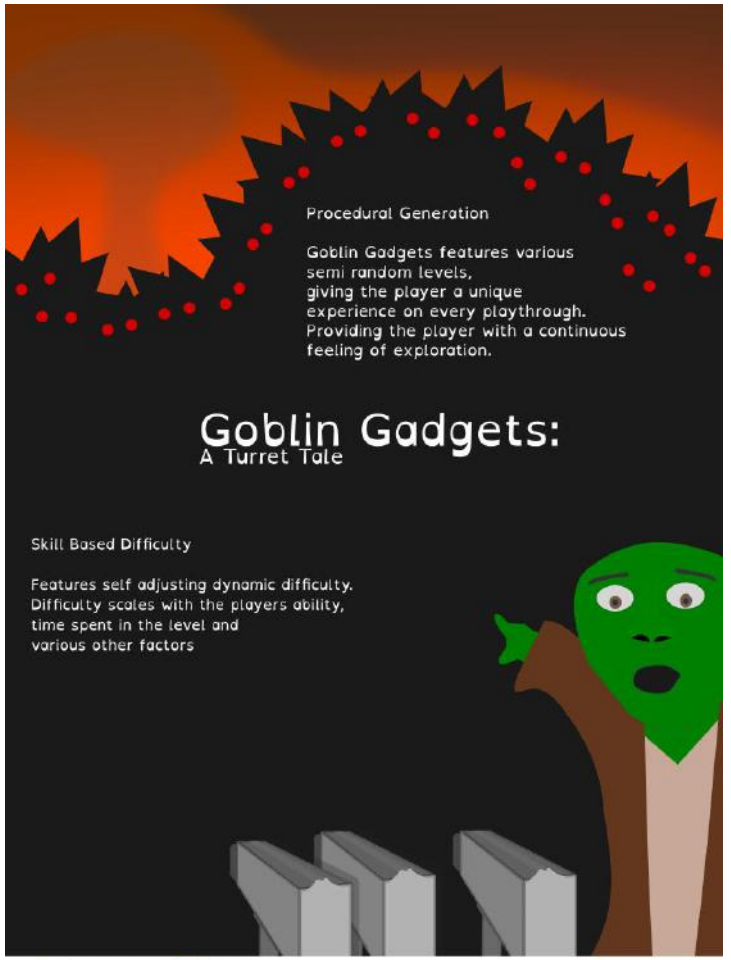
by Keith Butler

Project Areas

- Game Development

Project Supervisor

Patrick McInerney



The project aims to develop a 3D Wave-Based Survival video game. The player will have to strategically evade hoards of rogue robots using advanced movement abilities to guide them into player made traps. Set in a post robot uprising world where the few remaining goblins are hidden in isolated communities around the world.
Set out on a procedurally generated mission to put an end to the robots once and for all, with the help of a friendly sentient turret enemy AI will fend off the player using swarm mechanics and time based difficulty.

Technologies: Godot, Blender, GDScript, Aseprite, C#, Git, Github, Trello, Jekyll

https://keithbutler-wit.github.io/final_year_project/

Digital Memorials

#7 / TL252

Academic Title

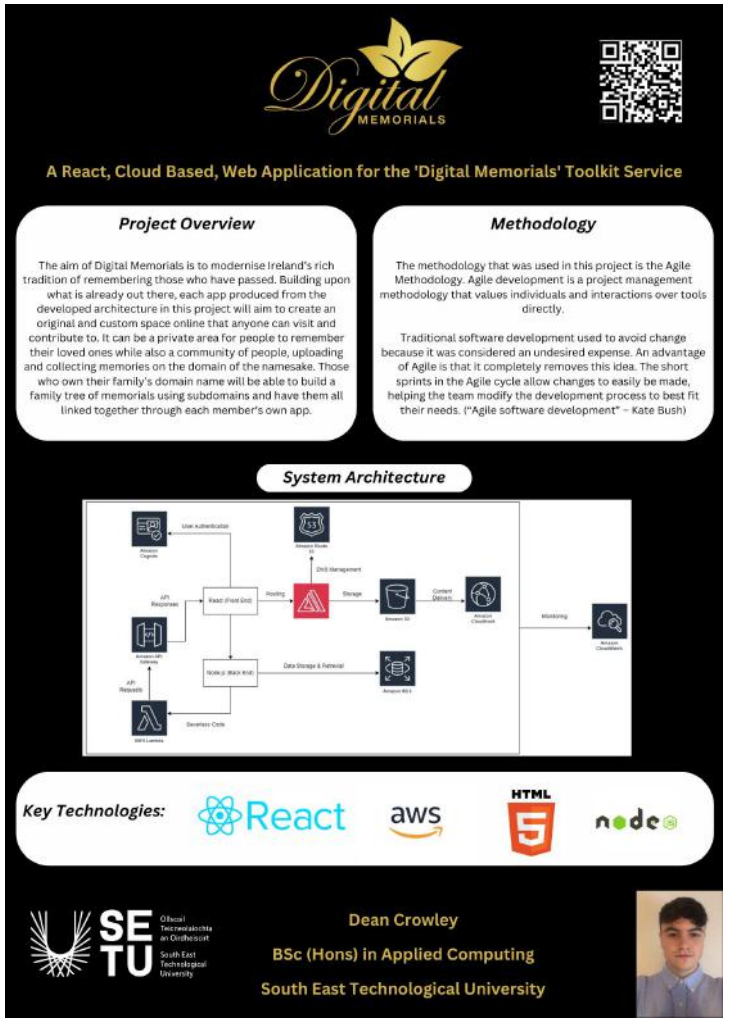
A React, Cloud Based, Web Application for the '*Digital Memorials*' Toolkit Service

by Dean Crowley

Project Areas

- Cloud Computing
- Database and Analytics
- Software Development: (Back End / Core / Front End / Web)

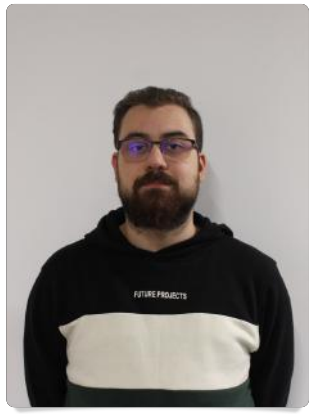
Project Supervisor
Muhammad Iftikhar Umrani



The aim of Digital Memorials is to modernise Ireland's rich tradition of remembering those who have passed. Building upon what is already out there, each app produced from the developed architecture in this project will aim to create an original, high quality and custom space online that anyone can visit and contribute to from anywhere in the world. It can be a private area for people to remember their loved ones while also a community of people, uploading and collecting memories on the domain of the namesake.

Technologies: React, HTML/CSS, JavaScript, Node.js, Express.js, Multiple AWS Services

https://deancrowley24680.github.io/



KapU - Entry Control for U

#8 / TL252

Academic Title

IoT-based Entry Control System Hosted on AWS

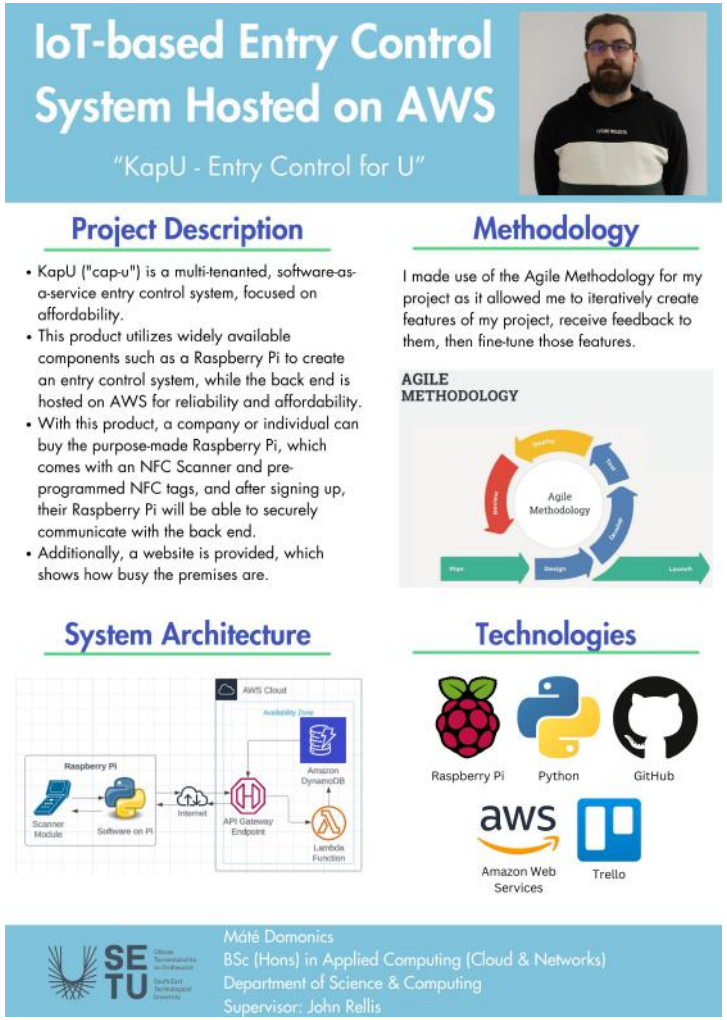
by Máté Domonics

Project Areas

- CI/CD & Testing
- Cloud Computing
- Database and Analytics
- Internet of Things
- Software Development: (Back End / Core / Front End / Web)

Project Supervisor
John Rellis

KapU is a multi-tenanted, software-as-a-service entry control system, focused on affordability. This product utilizes widely available components such as a Raspberry Pi to create an entry control system, while the back end is hosted on AWS for reliability and affordability.
With this product, a company or individual can buy the purpose-made Raspberry Pi, which comes with an NFC Scanner and pre-programmed NFC tags, and after signing up, their Raspberry Pi will be able to securely communicate with the back end. Additionally, a website is provided, which shows how busy the premises are.



Technologies: Raspberry Pi, Python, ISO/IEC 14443 (NFC), AWS DynamoDB

https://github.com/MateDomonics/entry-control-system/

Elementalist

#9 / TL252

Academic Title

3D Turn-based Game with Elemental Combat System

by Jack Donohoe

Project Areas

- Animation
- Game Development

Project Supervisor
Patrick Felicia

Elementalist is a 3D Turn-Based Dungeon Crawler with a focus on a unique system in which elements can be acquired from defeated enemies. These elements can then be combined by the player to create new combinations, which will provide the player new abilities to use. The player will make their way through several procedurally generated floors of a dungeon environment, defeating enemies and growing in power to progress. The game features a turn-based combat system which provides players with many different options and strategies to use in battle.

Technologies: Unity, C#, Blender, Github, Trello, HLSL

https://jack-donohoe.github.io/Elementalist-FYP-Website/

Inprov

#10 / TL252

Academic Title

Automated Server Provisioning and Configuration Using Infrastructure as Code

by Jack Duggan

Project Areas

- Cloud Computing
- DevOps
- Software Development: (Back End)

Project Supervisor
Rahul Mhapsekar

InProv is an automated infrastructure provisioning solution making use of DevOps and Infrastructure as Code practices, as well as various local and cloud technologies to provision and configure established Linux servers effortlessly.
In many enterprises, the process of server provisioning and configuration is still reliant on manual procedures. This inefficient approach impacts the productivity of infrastructure teams, consuming valuable time that could be utilized elsewhere. An implementation of InProv in enterprise would allow infrastructure engineers and Linux system administrators to free themselves from the burden of manual provisioning.
With InProv, servers can be created, fully-configured and seamlessly integrated into the existing infrastructure, at the click of a button.

Technologies: Terraform, Puppet, Python, BASH, Linux, Cloud-init, Amazon Web Services, React

https://jackjduggan.github.io/

Blueprinted

#11 / TL252

Academic Title

Procedurally Generated 3D Open-world Unity Game with In-depth Resource Management and Advanced AI

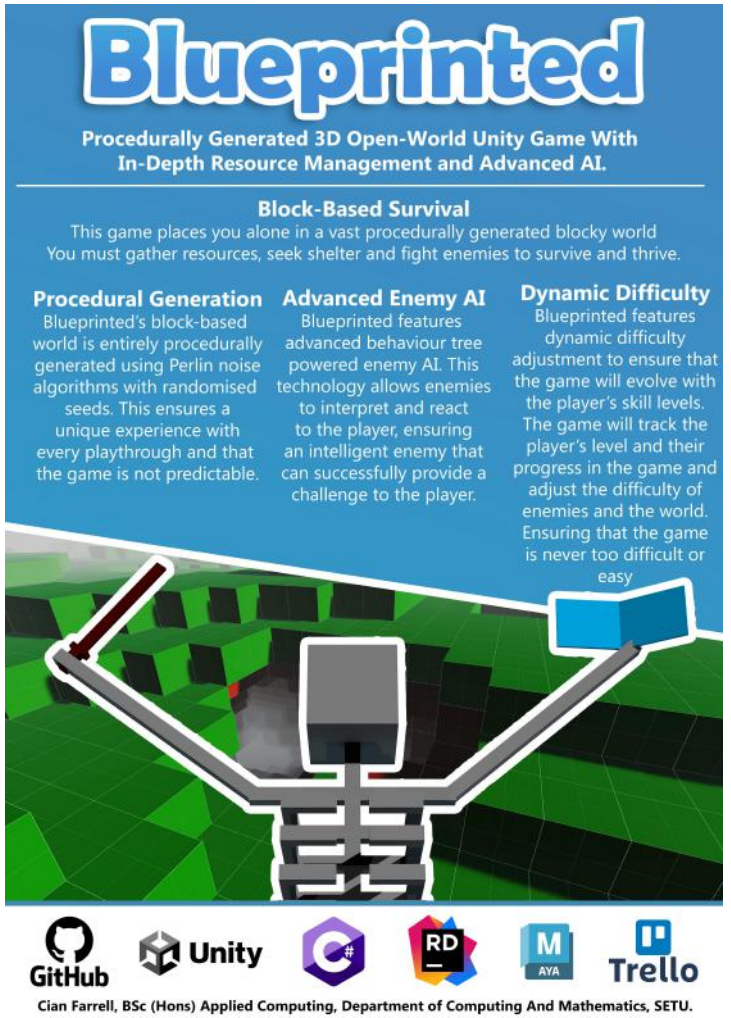
by Cian Farrell

Project Areas

- Game Development

Project Supervisor

Patrick Felicia



Blueprinted is a 3D game where a player starts in an infinitely expansive procedurally generated world. The player takes the role of a lost adventurer stranded in an abandoned environment. Players must find resources and defend themselves from the elements in the blocky open world.
Blueprinted contains many complex features such as advanced procedural generation to allow for unique playthroughs each time, advanced enemy AI that will keep players alert and dynamic difficulty that will ensure the game matches the player's skill level as they progress through the game.

Technologies: Unity, C#, Jetbrains Rider

https://cfarrell02.github.io/fyp-blueprinted-site/

Gjallarhorn

#12 / TL252

Academic Title

Python Based Team Management and Workload Monitoring Tool

by Cormac Farrell

Project Areas

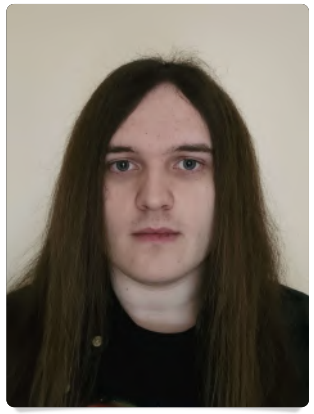
- Computer Networks
- Computer Security
- Software Development: (Back End / Core / Front End / Web)

Project Supervisor
Michael McMahon

Gjallarhorn is an automated alert system and workload management tool, specifically tailored for use in multinational offices or those adopting a hybrid work-from-home model, especially in continuous operation centres such as those operated by security teams or IT support centres. The primary function revolves around a client-side script that diligently monitors endpoint activities, including mouse movements and keyboard interactions. This data is then transmitted to the server, where it is presented in a user-friendly format for employees and managers to track online presence and coordinate tasks effectively.

Technologies: Python, Javascript, html, css

https://cormacwit.github.io/



Q-Up: Your Queuing Companion

#13 / TL251

Academic Title

Cloud-based Virtual Attraction Queuing System with Accompanying Android App

by Dylan Fennelly

Project Areas

- Cloud Computing
- Software Development: (Mobile Native)

Project Supervisor
John Rellis

Q-Up is a virtual queuing system for attraction-based facilities that enables visitors to wait for an attraction in a 'virtual queue' rather than a physical queue. Using the app, a visitor can view attractions in a facility and enter into a virtual queue for an attraction, being able to enjoy other attractions while still in the queue for the first attraction. This system allows visitors to queue for the attractions they want while being able to enjoy the rest of the facility, and redirect traffic to attractions with shorter queues, better distributing visitors.

Technologies: Android, Kotlin, AWS, DynamoDB, S3, Cognito, Google Maps, QR

https://dylanfennelly.github.io/Q-Up/

EthicalShield: AI, Ethics & Security

#14 / TL251

Academic Title

Investigating Ethical AI – Capabilities & Implications in the Cybersecurity Space

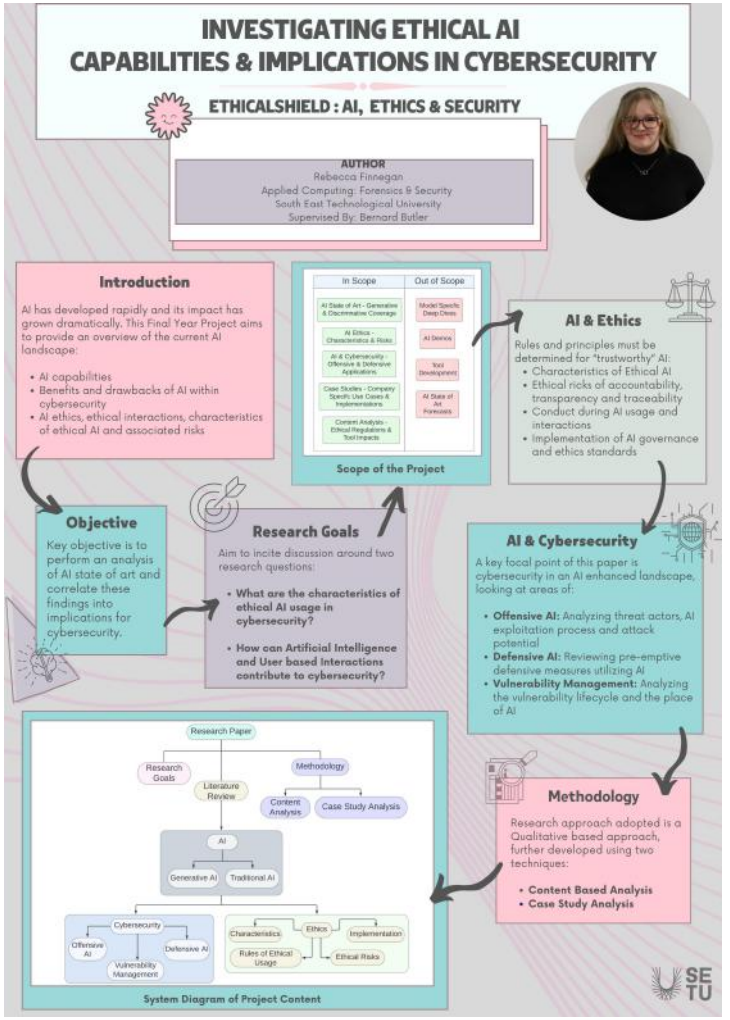
by Rebecca Finnegan

Project Areas

- Artificial Intelligence
- Computer Security

Project Supervisor

Bernard Butler



This project analyses the Artificial Intelligence state of art and the impact on cybersecurity. The project covers AI Ethics, scoping characteristics of Ethical AI alongside risks and concerns. Identifying measures to address these concerns to yield a positive result.
To address the research questions posed the paper takes a qualitative research approach: content analysis and case study analysis from an end user perspective. The project aids to understand the security landscape within AI. Providing guidance to organizations seeking implementation strategies for AI in cybersecurity.

Technologies: Overleaf LaTex, GitHub, GitHub Pages, Trello, Visual Studio Code

https://rfinnegan111.github.io/FYP-Research-Repo/

Tick-It

#15 / TL251

Academic Title

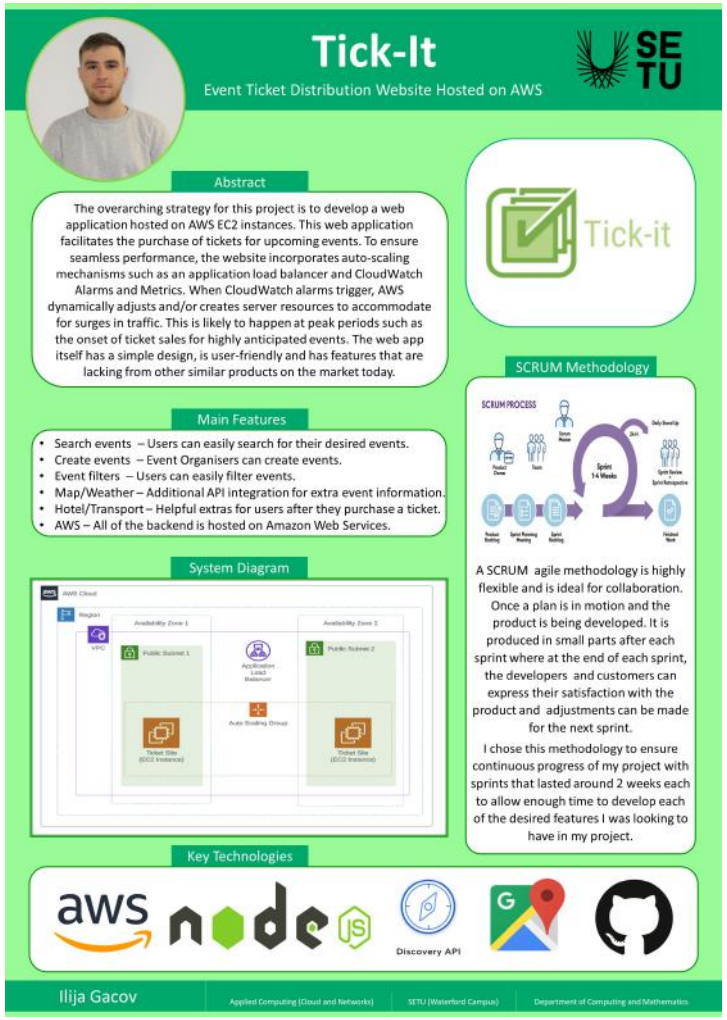
Event Ticket Distribution Website Hosted on AWS

by Ilija Gacov

Project Areas

- Cloud Computing
- Computer Networks
- Software Development: (Front End)

Project Supervisor
Deirdre O'Halloran



The overarching strategy for this project was to develop a web application hosted on AWS EC2 instances. This web application facilitates the purchase of tickets for upcoming events. To ensure seamless performance, the website incorporates auto-scaling mechanisms such as an application load balancer and CloudWatch Alarms and Metrics.
When CloudWatch alarms trigger, AWS dynamically adjusts and/or creates server resources to accommodate surges in traffic. The web app itself has a simple design, is user-friendly and has features that are lacking from other similar products on the market today.

Technologies: Amazon Web services, Javascript, HTML, CSS

https://ilegacov.wixsite.com/tick-it-landing-page

Sun Life Dental Mobile App Upgrade

#16 / TL251

Academic Title

Enhancing Sun Life Mobile Application: A Comprehensive Upgrade Project

by Michael Gerber

Project Areas

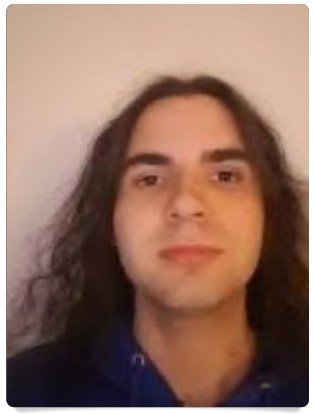
- Software Development: (Back End / Front End / Mobile Native)

Project Supervisor
Sonya Hogan

This final year project aims to anhance Sun Life's existing mobile application, particularly their Benefits tools app. With a primary objective of improving user experience and meeting the evolving needs of Sun Life's userbase. Key focus areas include app redevelopment, where the current mobile app will undergo a comprehensive overhaul using the Flutter cross-platform framework to ensure a seamless user experience across various mobile operating systems. Additionally, the upgraded app will integrate a newer API sourced from Sun Life, enabling access to newer features and functionalities. Emphasis will be placed on future-proofing the app, ensuring that can easily be improved and upgraded in the future.

Technologies: Flutter, Dart, Android, iOS, SourceTree, JIRA

https://sites.google.com/mail.wit.ie/michael-gerber-200932656/home



VoiceGuard

#17 / TL251

Academic Title

Voice Authentication System Using Voice Analysis for Security

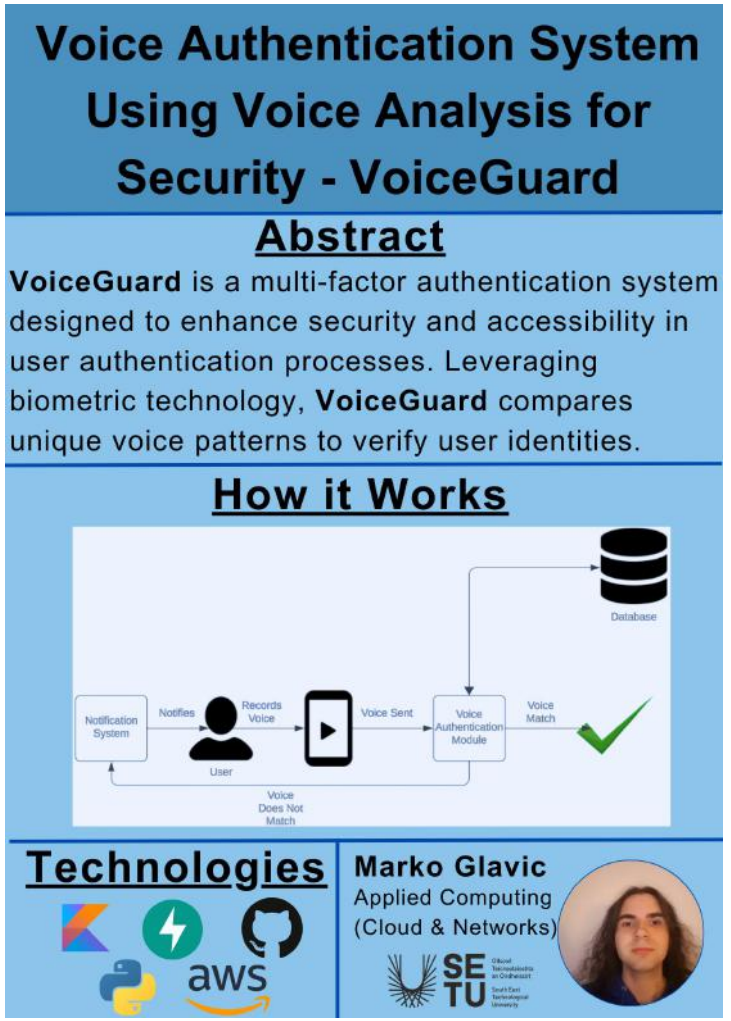
by Marko Glavic

Project Areas

- Computer Forensics
- Software Development: (Back End / Front End / Mobile Native)

Project Supervisor
John Rellis

With more and more information being collected every day, security and proper authentication are more important than ever. VoiceGuard is a multi-factor authentication system designed to enhance security and accessibility in user authentication processes. Leveraging biometric technology, VoiceGuard compares unique voice patterns to verify user identities, offering a seamless and secure authentication experience. With its ability to integrate into existing systems and accommodate users with mobility impairments, VoiceGuard aims to provide another way of authentication and mitigate security risks.



Technologies: Python, Kotlin, AWS, FastAPI

https://voicemfa.github.io/FYP-Website/

Electric Vehicle Diagnostics

#18 / TL251

Academic Title

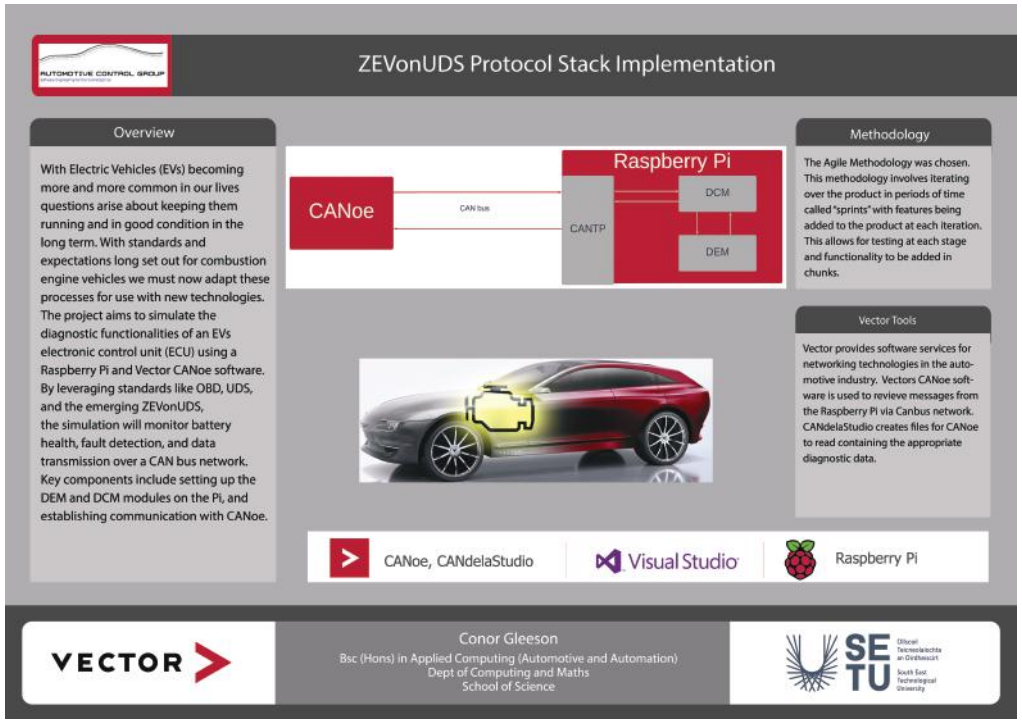
ZEVonUDS Protocol Stack Implementation

by Conor Gleeson

Project Areas

- Automotive and Automation
- Software Development: (Core)

Project Supervisor
Brendan Jackman



With Electric Vehicles becoming more and more common in our lives questions arise about keeping them running and in good condition in the long term. With standards and expectations long set out for combustion engine vehicles we must now adapt these processes for use with new technologies.
The project aims to simulate the diagnostic functionalities of an EVs electronic control unit using a Raspberry Pi and Vector CANoe software. Using standards like OBD, UDS, and the emerging ZEVonUDS, the simulation will monitor battery health, fault detection, and data transmission over a CAN bus network.

Technologies: Vector CANoe, Vector CANdelaStudio, Raspberry Pi, C,

https://conorgleeson.github.io/ZEVonUDS-fyp-site

Twilight Sun

#19 / TL251

Academic Title

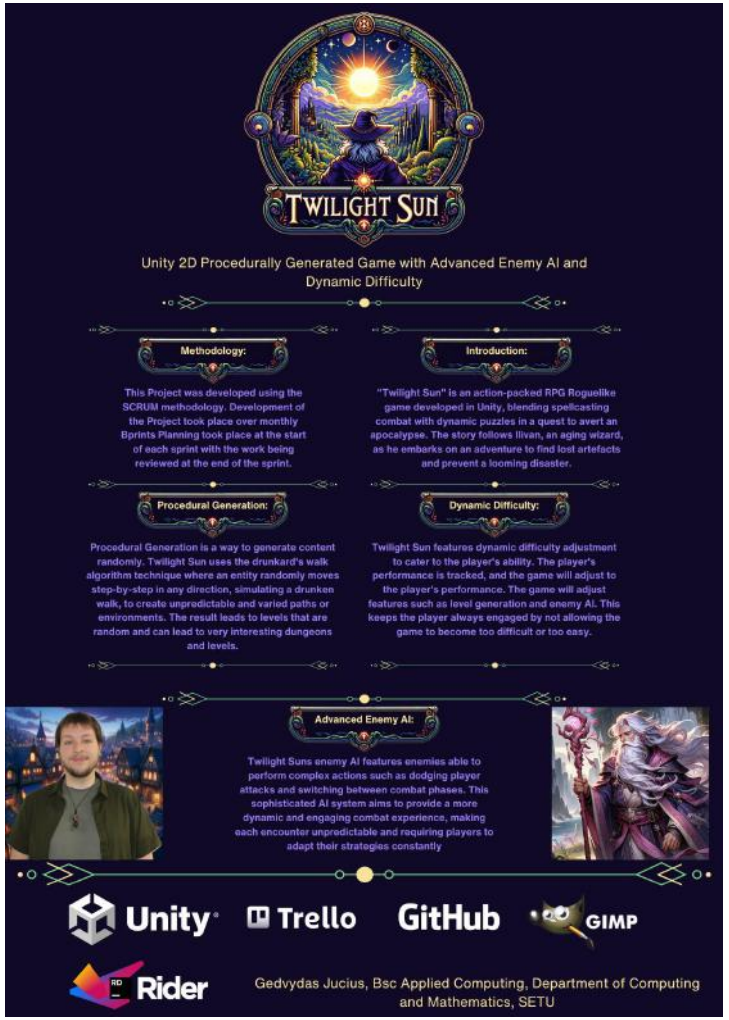
Unity 2D Procedurally Generated Game with Advanced Enemy AI and Dynamic Difficulty

by Gedvydas Jucius

Project Areas

- Game Development

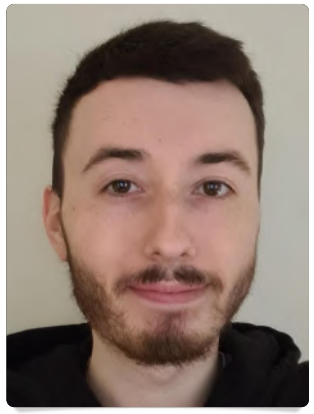
Project Supervisor
Patrick Felicia



Twilight Sun is a captivating RPG Roguelike game set in a mystical 2D world. The protagonist, Ilivan, an aging wizard, embarks on a quest to prevent a looming apocalypse by retrieving ancient artefacts. The game's world is procedurally generated, offering a fresh experience in each playthrough. It boasts advanced Enemy AI, a dynamic difficulty system, and a puzzle system, enhancing both the challenge and immersion. Players navigate through varied terrains, including mysterious mazes and dark dungeons, where strategic decision-making influences the game's narrative.

Technologies: Unity, C#, GIMP, Git, Github, Trello

https://ged-j.github.io/Twilight-Sun-Website/dark_index.html



Driver Awareness System

#20 / TL251

Academic Title

Applying the Principles of Functional Safety to the Development of an Automotive Software Component

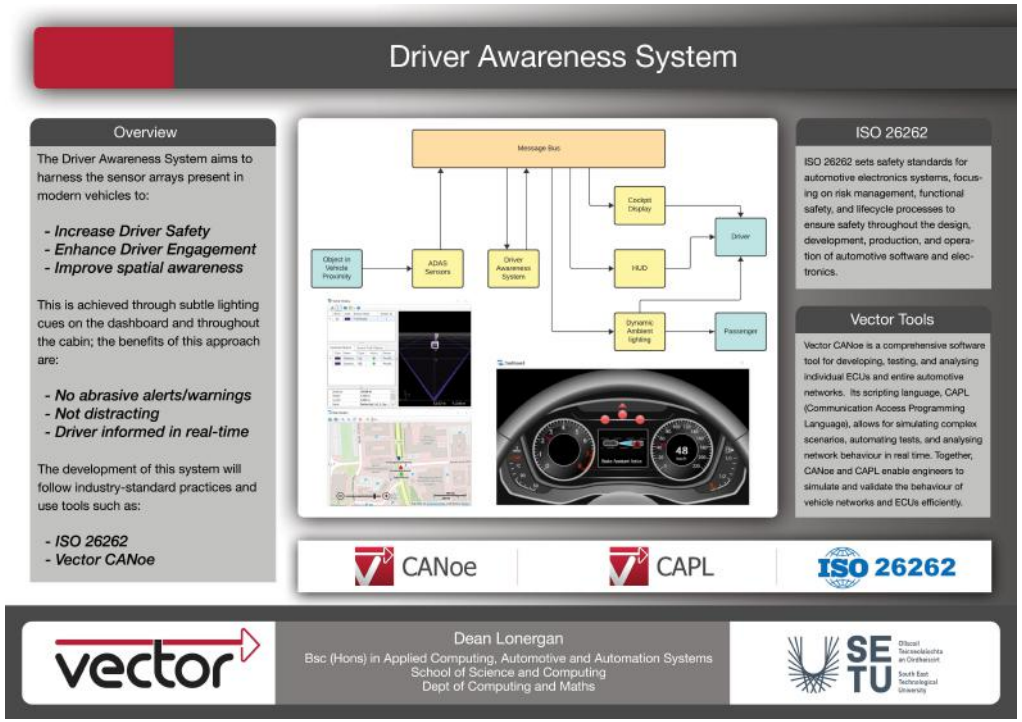
by Dean Lonergan

Project Areas

- Automotive and Automation
- Software Development: (Core)

Project Supervisor

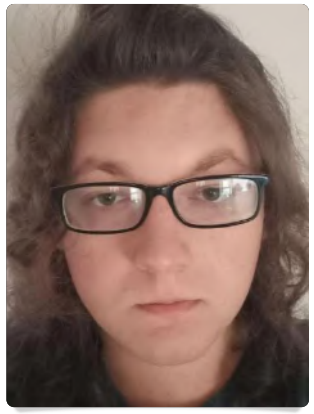
Brendan Jackman



The Driver Awareness System aims to enhance automotive safety and driver engagement. This is achieved by utilising the sensor data gathered by the Autonomous Driver Assistance Systems (ADAS) and presenting it in real-time to the occupants using subtle lighting cues through the dashboard, heads-up display, and cabin lighting. This approach will greatly increase spatial awareness without using abrasive alerts or warnings. The development process will use industry-standard tools such as Vector CANoe and adhere to the principles of functional safety in alignment with the ISO 26262 standard.

Technologies: Vector CANoe, CAPL, CAN, Car2X, ADAS

https://20092570.wixsite.com/deanlonergan



The IoT GPS Computer

#21 / TL251

Academic Title

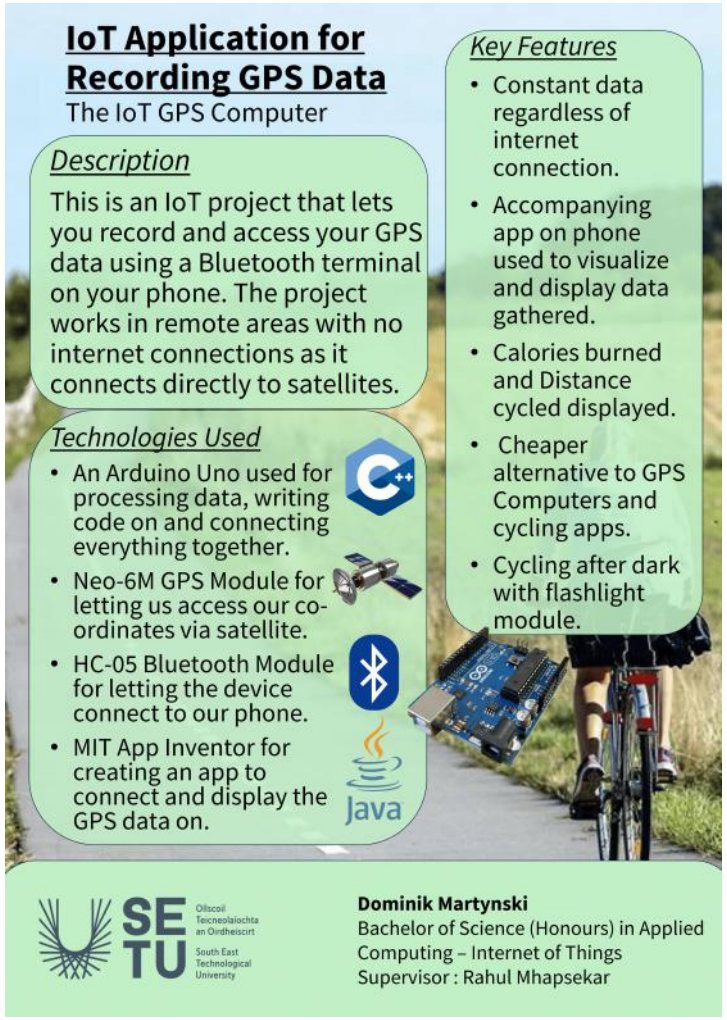
IoT Application for Recording GPS Data

by Dominik Martynski

Project Areas

- Cloud Computing
- Database and Analytics
- Internet of Things
- Software Development: (Mobile Native)

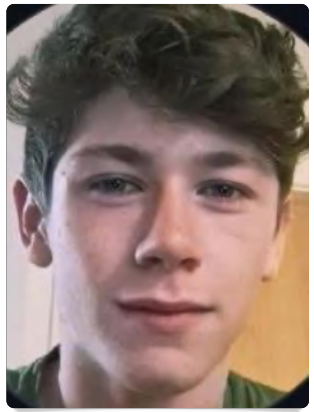
Project Supervisor
Rahul Mhapsekar



The project is comprised of an arduino, a bluetooth module and a GPS module. The whole point of the project is for it to give you an accurate reading of the distances you've cycled while being completely self reliant with no need for an internet connection. The project is meant to be durable and fit onto a bike while surviving the elements. All the information about cycled distance calories burned etc will be displayed to the user on an app which connects to the arduino using bluetooth. Data is saved in text files and can be analyzed.

Technologies: Python, Bluetooth, Javascript, C++

https://github.com/20094523/IoT-GPSComputer



Pilgrim Portal - A Website for Pilgrim

#23 / TL228

Academic Title

Full Stack Development of a Web Application Using Angular, AWS and DynamoDB

by Cillian Murphy

Project Areas

- Database and Analytics
- Software Development: (Back End / Web)

Project Supervisor

Rahul Mhapsekar

The inspiration for this project stems from the developer's personal experiences with the Camino, noting the outdated nature of existing websites. The objective is to leverage modern web development practices to offer a full-stack website that enhances the pilgrimage experience for both solo and group travelers. The project targets a niche market, focusing on attracting a younger audience and providing support to solo travelers through a user-friendly platform that facilitates route planning, social interaction, and access to critical information without paywalls.

Technologies: Angular, AWS and DynamoDB.

https://cillian00.github.io/FYP-Landing-Page/

PowerFlow Pro: Seamless EV Charging UI

#24 / TL228

Academic Title

ISO 15118 Protocol Stack: Implementing Secure EV Charging for Efficient Vehicle-station Comm with UI

by Emma Nolan

Project Areas

- Automotive and Automation
- Database and Analytics

Project Supervisor
Sonya Hogan

This project implements secure communication between electric vehicles and charging stations, ensuring standardized and efficient information exchange through the ISO 15118 protocol. Employing a microcontroller to simulate the EV end of the ISO 15118 protocol and Vector CANoe a simulation tool is utilized to simulate the charging station protocol, creating a reliable test environment.
The user-friendly interface enhances the charging experience, supported by a robust database and front-end application for managing parameters and viewing charging history.

Technologies: Vector CANoe, MySQL Workbench, Raspberry Pi, Ethernet cable, AWS, C, PHP, Foundation 6

https://emmanolan2019.wixsite.com/iso-15118-protocol-s

Micro:Bit Sensor Pod Breakout Board

#25 / TL228

Academic Title

USV-Lir Micro: Bit Sensor Pod Abstraction and API

by Adam O Brien

Project Areas

- Automotive and Automation
- Internet of Things
- Software Development: (Core)

Project Supervisor
Jason Berry

The purpose of this project is to enhance the Unmanned Surface Vehicle (USV) Lir ecosystem by refining its sensor pod system.
This involves calibration procedures, enhancing the vehicle's ability to collect and process data and designing a printed circuit board that has a Micro: bit interface.
By using a Micro: bit interface this simplifies communication between the sensors and the USV's central control system, enabling both technical and non-technical people to view data transmission and analysis through using the sensor pod library

Technologies: Microbit, QGroundControl, PixHawk, Typescript, MQTT, GitHub, Autodesk Eagle

https://github.com/AdamOBrien/USV-LIR-Microbit-Abstraction

Hullbreaker

#26 / TL228

Academic Title

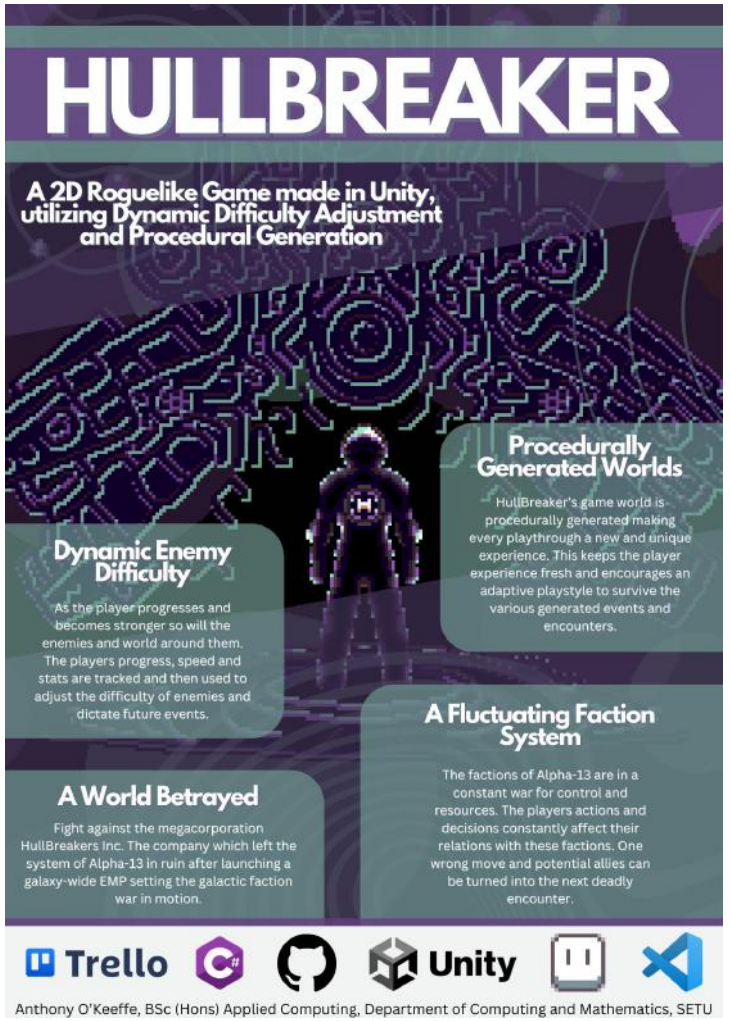
A 2D, Roguelike, RPG Unity Game Utilizing Advanced AI, Dynamic Difficulty and Procedural Generation

by Anthony O Keeffe

Project Areas

- Animation
- Game Development

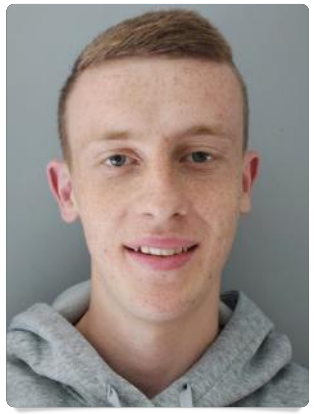
Project Supervisor
Brendan Lyng



HullBreaker is a 2D role playing, roguelike game. A roguelike game is a genre of game in which death is permanent and the game is restarted upon dying. The game is set in a war-stricken galaxy called Alpha-13, based in the far future. HullBreaker features many complex and engaging mechanics such as procedurally generated solar systems with roaming AI ships that can affect the worlds around them, an RPG inspired combat system with dozens of ships and weapons to be used. The game also features a dynamic difficulty systems that adjusts and adapts to the players skill level.

Technologies: Unity, C#, GitHub, Trello

https://guygoose.github.io/HullBreaker-FYP-Website/



Service-oriented Diagnostics

#27 / TL228

Academic Title

Implementing Diagnostics in an Automotive System Through SOME/IP Communication Protocol

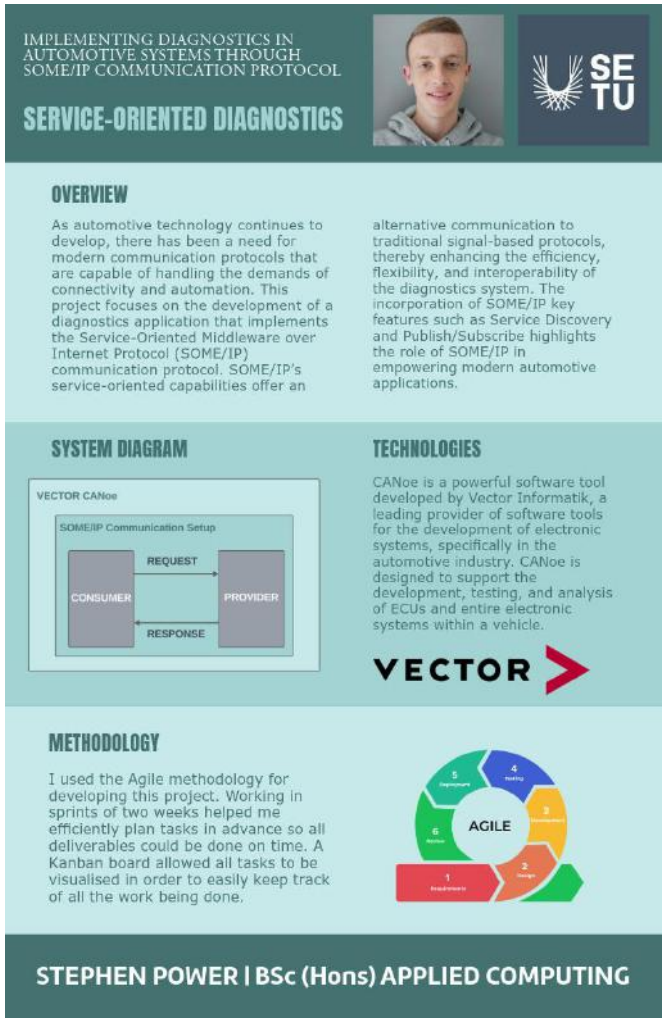
by Stephen Power

Project Areas

- Automotive and Automation
- Software Development: (Back End)

Project Supervisors

Sonya Hogan, Joe Daly



As automotive technology continues to develop, there has been a need for modern communication protocols that are capable of handling the demands of connectivity and automation. This project focuses on the development of a diagnostics application that implements the Service-Oriented Middleware over Internet Protocol (SOME/IP) communication protocol. SOME/IP's service-oriented capabilities offer an alternative communication to traditional signal-based protocols. The incorporation of SOME/IP key features highlights the role of SOME/IP in empowering modern automotive applications.

Technologies: SOME/IP, Vector CANoe, CAPL

https://stephenpower37.github.io/FYP-Landing-Page/

Chaos Chefs

#28 / TL228

Academic Title

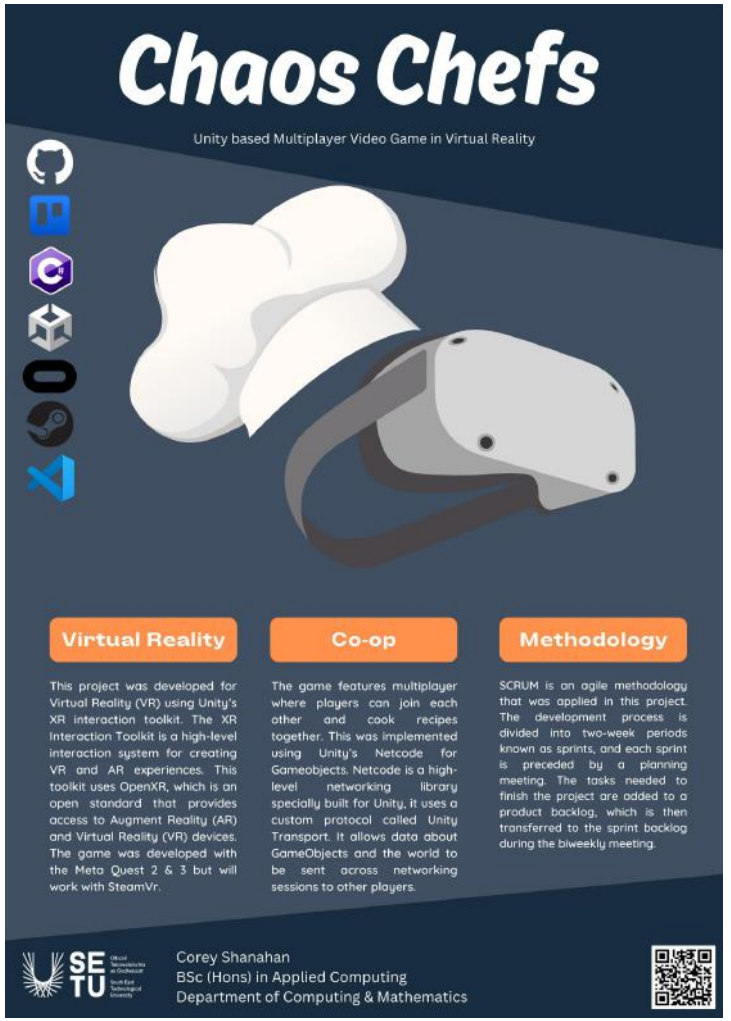
Unity Based Multiplayer Video Game in Virtual Reality

by Corey Shanahan

Project Areas

- Computer Networks
- Game Development

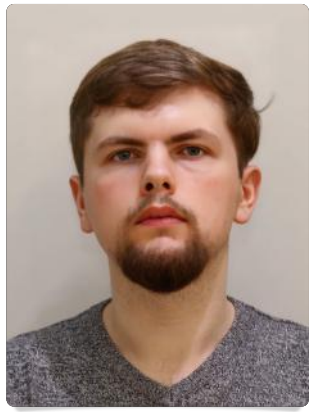
Project Supervisor
Brendan Lyng



Chaos Chefs is a VR cooking simulator game where players play as chefs in a fast-paced kitchen. Players can join others and cook recipes together. Each round lasts 5-10 minutes, with customers ordering burgers with different toppings. Players grill patties, chop ingredients, and put them on a plate. Impatient customers demand quick completion, and if players take too long, they lose customers. Players who complete their orders on time earn cash to upgrade their kitchens. The game encourages patience and creativity in cooking.

Technologies: Unity, C#, Netcode, Relay, Lobby, Trello, Git, Github

https://corshan.github.io/FYP/



Echoing Depths

#29 / TL228

Academic Title

First-person Retro-inspired Dungeon Crawling RPG

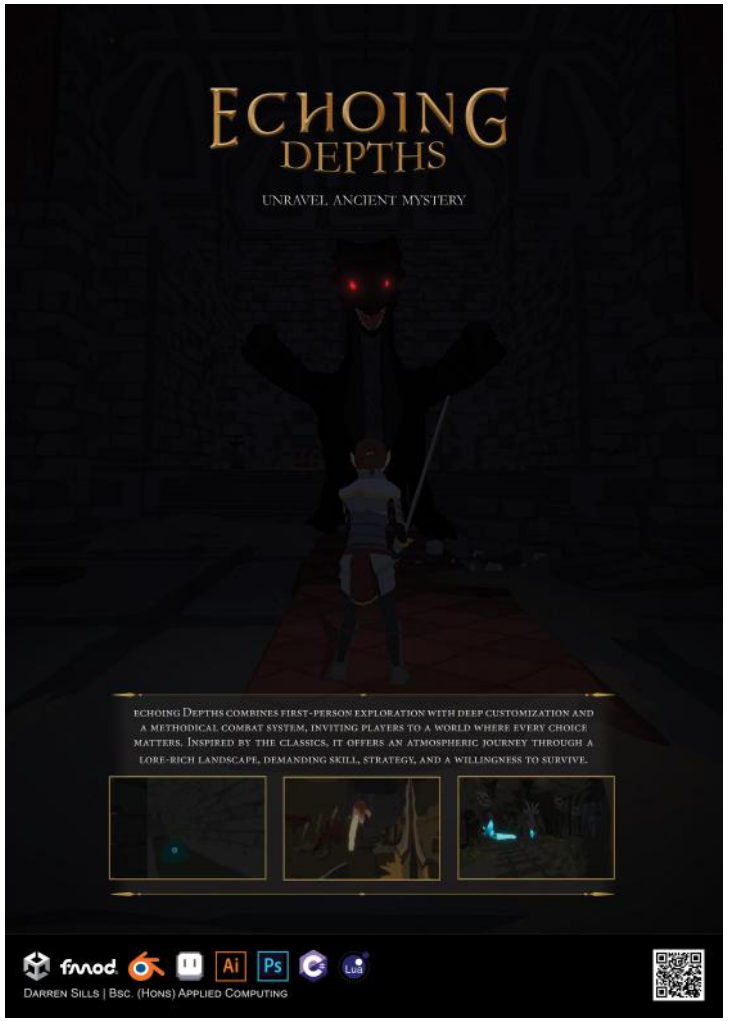
by Darren Sills

Project Areas

- Animation
- Artificial Intelligence
- Digital Graphic Design
- Game Development

Project Supervisor
Denis Flynn

In 'Echoing Depths', you will create your character and arrive at a gloomy settlement called The Fringe. This encampment is filled with would-be adventurers seeking glory, answers, and treasure in the nearby Depths: a haunting and perilous underground realm, the remnants of a civilization that sought to transcend mortality.
The game emphasizes deep exploration and rewards your curiosity. Combat is strategic and meaningful, offering a wide range of options through detailed character customization. There will be many choices to be made, both good and evil, all set to a captivating soundtrack.



Technologies: Unity, Blender, Aseprite, FMOD, C#, LUA

https://d-sills.github.io/Echoing-Depths/

Mystic Mayhem

#30 / TL228

Academic Title

Procedurally Generated Unity3D Game with Voice Recognition Spell-casting and Enemy AI

by Moses Ugwulo

Project Areas

- Game Development

Project Supervisor
Brendan Lyng

Mystic Mayhem is a 3D, open-world, spell-casting game. The game takes place in a mystical realm where the laws of magic supersede the regular laws of physics. The user plays as Aleister who lives in the village of Spriggansfield. Today is no ordinary day as the ground starts to rumble and shake. Dark rolling clouds begin to form in the sky and disastrous weather begins to rain across the realm. Aleister is tasked with investigating and purging the evil behind this mysterious weather.
Mystic Mayhem offers a unique experience utilising speech recognition to allow the player to cast spells using their voice which allows for an engaging experience and the game world is procedurally generated to allow for a different world exploration experience every time.

Technologies: Unity, C#, GitHub, Trello

https://sites.google.com/mail.wit.ie/fyp-landing-page

Smart Incident Sentinel

#31 / TL228

Academic Title

Logguard: An Intelligent Machine Learning Incident Detection System

by William Vasilev

Project Areas

- Automotive and Automation
- Computer Networks
- Database and Analytics
- Media Development and Production

Project Supervisor
Richard Lacey

My Final Year Project, LogGuard is a state-of-the-art machine learning programme that will transform incident detection through seamless log scanning. The sheer amount of data generated in today's complicated digital ecosystem makes finding and resolving incidents a difficult task. My creative solution offers a proactive and quick method of incident identification by utilising machine learning algorithms to analyse logs effectively. My programme improves cybersecurity measures and gives organisations the ability to keep ahead of potential threats by utilising advanced pattern recognition and anomaly detection.

Technologies: Jupyter-Lab, Python, scikit learn, pandas, numpy, matplotlib, seaborn.

https://williamvasilev.wixsite.com/william-vasilev-fyp

An Exploration into Data Collection

#32 / TL228

Academic Title

How Regulated Should Data Collection Be and How May it Develop in the Future

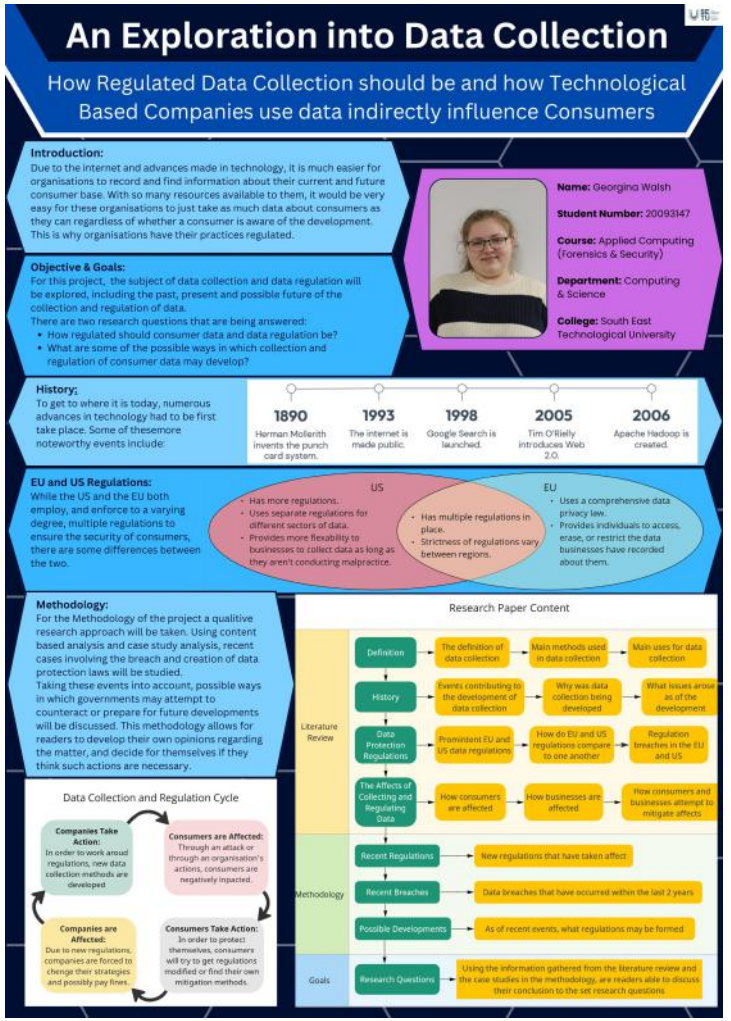
by Georgina Walsh

Project Areas

- Computer Security
- Database and Analytics

Project Supervisor

Lizy Abraham



Throughout the internet, most organisations who provide their services online will make use of data collection and processing in order to better cater themselves to consumers and help plan their future developments more effectively. If an establishment collects data, they must then follow a set of regulations that vary on location. This paper aims to provide readers with an overview into the topics of data collection and data regulations, some of their prominent features and effects, as well as possible developments that may occur within data collection and regulation as of recent events.

Technologies: Github, Github Pages, Canva, Miro, Trello, Overleaf

https://georginawalsh.github.io/FYP-Website/

BSc (Hons) in Computer Forensics and Security

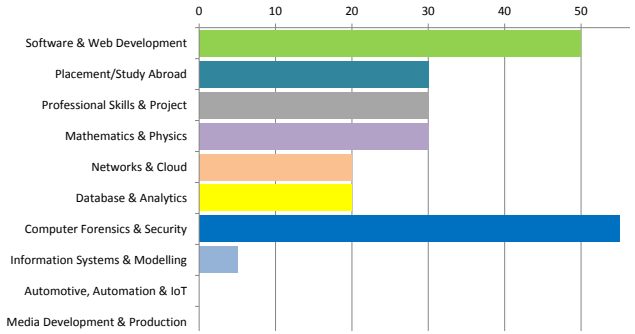
The BSc (Hons) in Computer Forensics & Security is a 4–year ab–initio Level 8 programme.

The aim of the BSc (Honours) in Computer Forensics & Security programme is

to produce graduates with the necessary knowledge, skills and expertise to pursue a career in computer security and computer forensics. Graduates should be able to build, use and adapt software and hardware solutions to conduct investigations or to secure networks and systems. The course will also confer on the graduates a set of personal and professional attributes that will allow them greater flexibility in the development of their own career options. Specifically the course aims to produce graduates who can

- Reason and problem-solve to a high level in the area.
- Design specific security solutions.
- Provide security support to systems development teams.
- Participate constructively in the deployment of new security technologies.
- Participate in the development of forensic solutions in response to a security solution.
- Undertake research-based projects where required.
- Manage technology-based projects that require the handling of innovation and change in dynamic environments.
- Present and communicate clearly.
- Work with others in a group environment.

The breakdown of course credits across the four years on each specialism is illustrated by the following charts.



Malverticus Shield

#33 / TL225

Academic Title

A Web-based Software Module to Combat Malvertising and Malicious URLs

by Ian Barnes

Project Areas

- Computer Networks
- Computer Security
- Software Development: (Back End / Front End / Web)

Project Supervisor
John Sheppard

Malverticus is a groundbreaking web-based software module designed to address escalating dangers of malvertising and malicious URLs that plague our digital landscape. This innovative cybersecurity solution offers both academic and commercial value by providing proactive defence mechanisms against these prevalent threats. By leveraging advanced Data Mining and Data Modeling Classification Techniques, Malverticus provides a robust shield against the infiltration of harmful content and URLs to end users. By doing this it can anticipate and neutralize potential dangers before they can cause harm, ensuring a safer online environment for users and enterprises alike.

Technologies: Data Modeling and Clasification, Web based plug in extension. AWS

https://barnesian.github.io/MyFYPWebsite/

StegCatcher - Hidden Data Detector

#34 / TL225

Academic Title

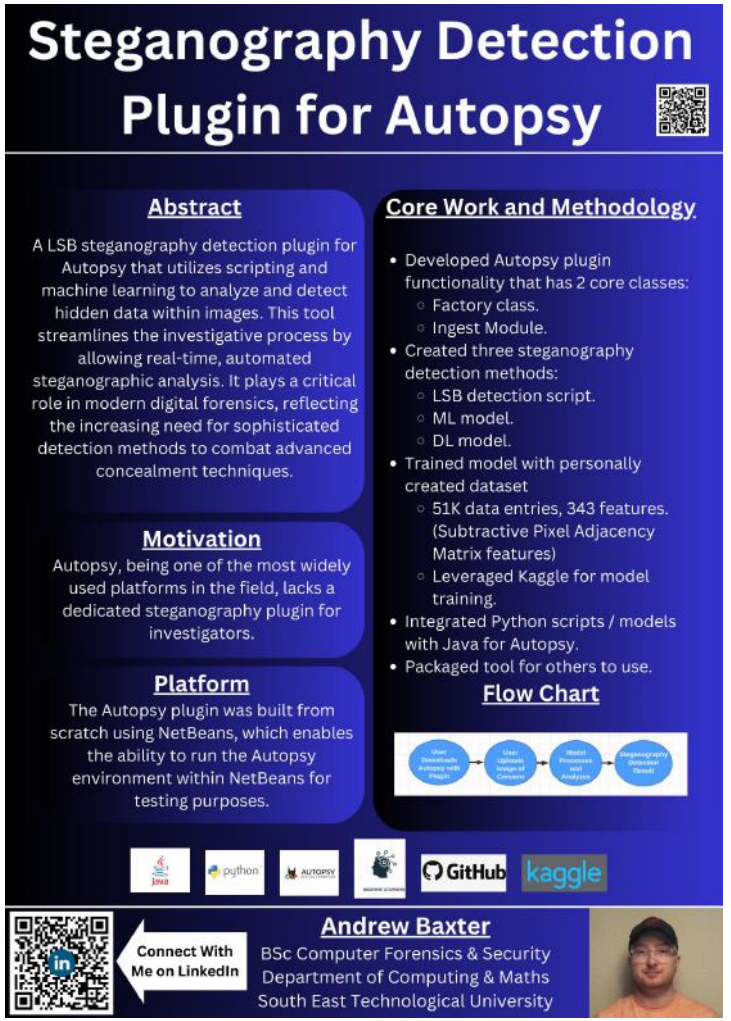
Steganography Detection Plugin for Autopsy

Project Areas

- Computer Networks
- Database and Analytics
- Media Development and Production

Project Supervisor
John Sheppard

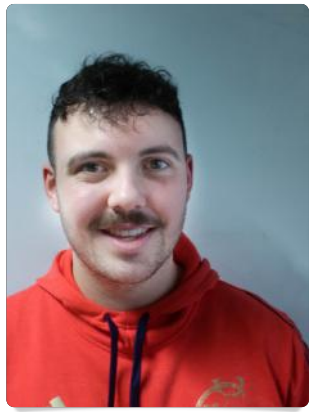
by Andrew Baxter



StegCatcher, specifically designed for the Autopsy digital forensics platform, significantly enhances steganalysis capabilities. It aims to detect hidden data within digital media, a common tactic in cybercrime, through steganography. This plugin integrates seamlessly with Autopsy, offering a user-friendly interface and machine learning detection methods to identify files with covert data. It's vital for forensic analysts to efficiently uncover concealed information, playing a crucial role in modern digital investigations.

Technologies: Autopsy, Java, Python, Github, Google Colab, Kaggle Kernels, Machine Learning, Deep Learning

https://andrewbaxter123.github.io/



Attack Shield

#35 / TL225

Academic Title

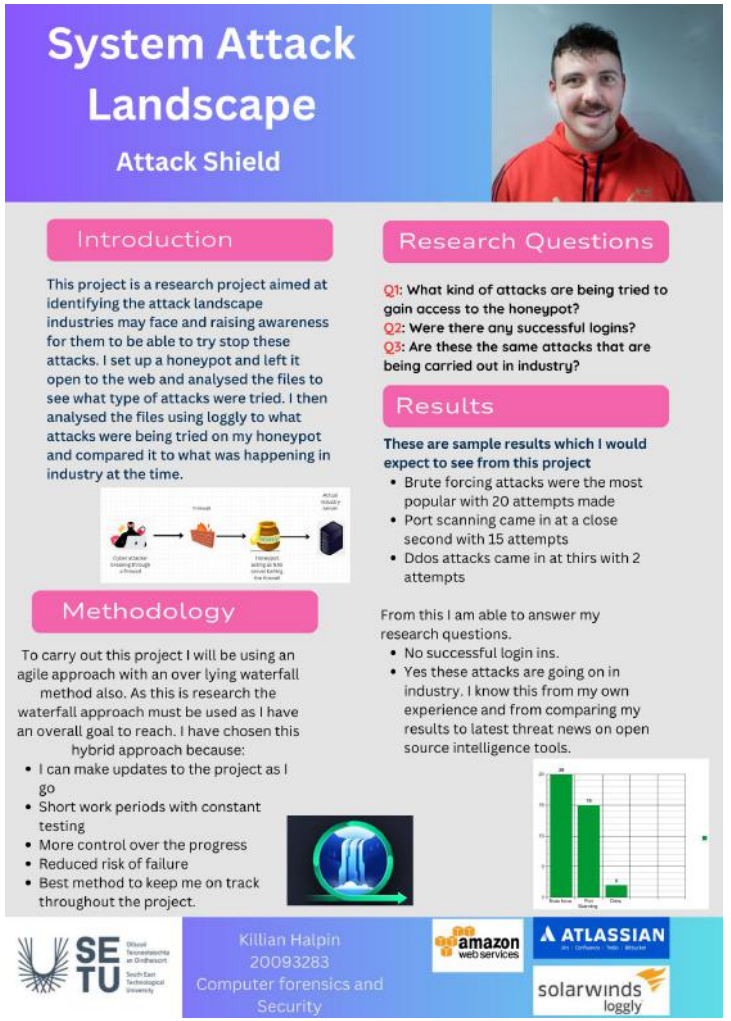
System Attack Landscape

Project Areas

- Computer Security

Project Supervisor
Bernard Butler

by Killian Halpin



This project is a hybrid research project aimed at identifying the attack landscape industries may face and raising awareness for them to be able to try stop these attacks.
With this I aim to help system administrators build defence against attacks to mitigate their risk of falling victim to a cyber-attack. I will create a honeypot and collecting logs, from this I will then analyse the logs and see what kind of attacks were attempted to try gain access to the honeypot. From there a script will be created focusing on the main threats which were logged. The script will be put on a system and ran continuously for vulnerabilities and check if there have been any previous attempts to breach the system. The goal would be to get this script real time alerting.

Technologies: Loggly, Amazon web services, word, formspree, Overleaf:, Online Gantt: Jira: W3schools, Python:,

https://killian-halpin.github.io/

Early Days

#36 / TL225

Academic Title

Machine Learning-based Assessment of Relationship Compatibility and Romantic Dealbreakers

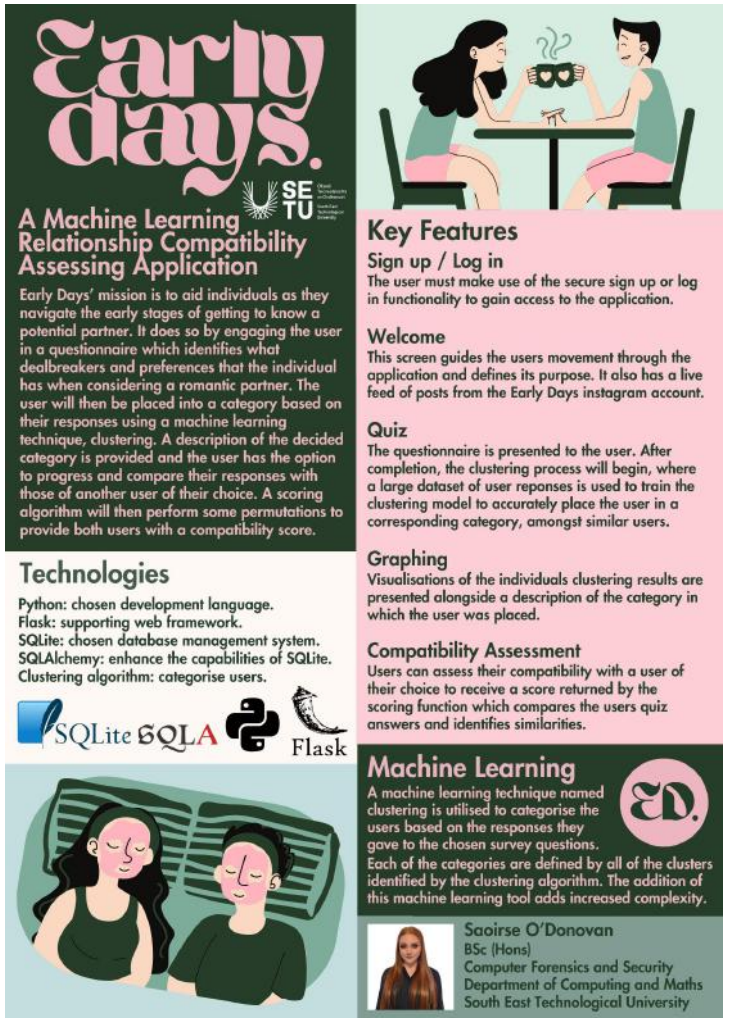
by Saoirse O'Donovan

Project Areas

- Database and Analytics
- Software Development: (Back End / Front End / Web)

Project Supervisor

Clodagh Power



In an era of increasingly fast-paced dating dynamics, navigating the early stages of getting to know a potential partner has its complexities. Early Days' overarching aim is to provide users with an application that aids them as they get to know a potential partner. It does so by providing users with an engaging questionnaire that encapsulates a series of prompts to uncover romantic dealbreakers. Users are the categorised into a relevant group before additional comparison scoring with others can by completed. Such functionality is delivered through a stylistic interface to engage users.

Technologies: Python, HTML, SQLite, SQLAlchemy, CSS, Github, Git, Render, K-Modes Clustering, PostgreSQL, Pandas

https://saoirseodonovan.github.io/fyp/

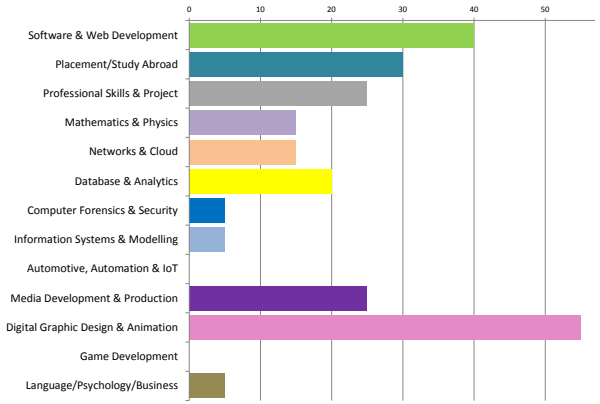
BSc (Hons) in Creative Computing

The **BSc (Hons) in Creative Computing** is a four–year Level 8 programme. Many students transfer to the final year of the programme having completed the Level 7 **BSc in Multimedia Applications Development**.

The aim of the BSc (Hons) in Creative Computing is

To provide students with the knowledge and practical experience of industry standard innovative tools and technologies, within the domains of technology and creative media. This enables graduates to pursue a career in both the computing and creative media industry. Ireland's globally recognised digital and creative economy has experienced significant growth in recent years. Enterprise Ireland aims to expand even further the export footprint of this growing sector, and skilled workers are required to do this. Creative Computing graduates will be qualified to fulfil the needs of this sector and many others.

The breakdown of course credits across the four years on these programmes is illustrated by the following chart.



Underwater

#41 / TL250

Academic Title

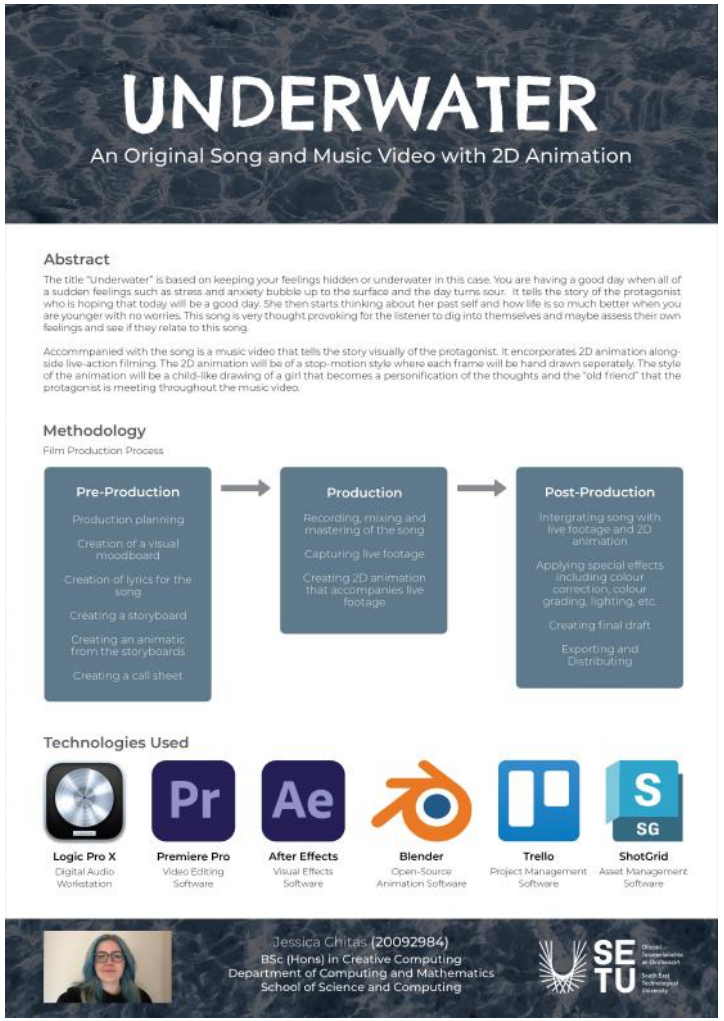
Underwater - Original Song and Music Video with 2D Animation

by Jessica Chitas

Project Areas

- Animation
- Digital Graphic Design
- Open Source

Project Supervisor
Jacqui Woods O'Brien



The title "Underwater" is based on keeping your feelings hidden or underwater in this case. It tells the story of the protagonist hoping that today will be a good day when all of a sudden she starts thinking about her past self and how life is so much better when you are younger with no worries.
Accompanied with the song is a music video that tells the story visually of the protagonist. It encorporates 2D animation alongside live-action filming. The 2D animation will be of a stop-motion style where each frame will be hand drawn seperately. The style of the animation will be a child-like drawing of a girl that becomes a personification of the thoughts and the "old friend" that the protagonist is meeting throughout the music video.

Technologies: Logic Pro X, ShotGrid, Adobe Premiere Pro, Adobe After Effects, Adobe Photoshop, Trello

https://chitasjessica.wixsite.com/portfolio/about-6

3D Printing & Prosthetic Limbs

#42 / TL250

Academic Title

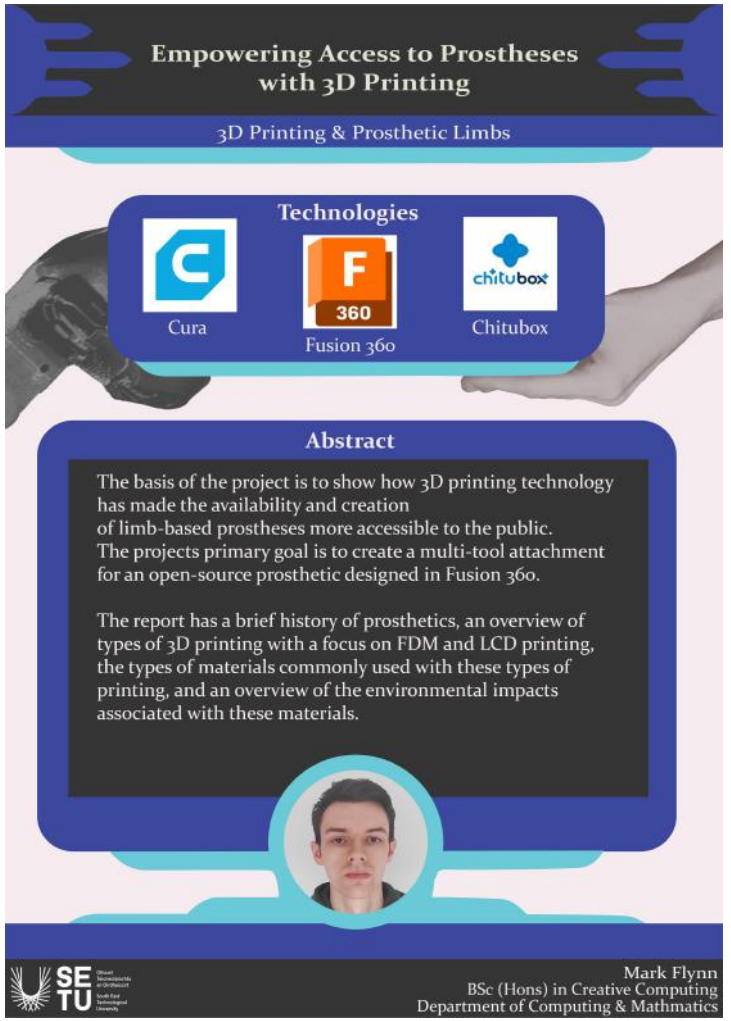
Empowering Access to Prostheses with 3D Printing

by Mark Flynn

Project Areas

- Open Source
- Personal Independent Project

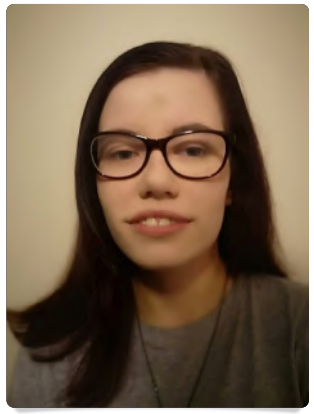
Project Supervisor
Patrick McInerney



The basis of the project is to show how 3D printing technology has made the availability and creation of limb-based prostheses more accessible to the public. The project's primary goal is to create a multi-tool attachment for an open-source prosthetic designed in Fusion 360.
The report has a brief history of prosthetics, an overview of types of 3D printing with a focus on FDM and LCD printing, the types of materials commonly used with these types of printing, and an overview of the environmental impacts associated with these materials.

Technologies: Fusion 360, UltiMaker Cura, Chitubox, Ender 3 V2 Neo, Elegoo Mars 3, Sovol SV07

https://markflynn20025214.wixsite.com/fyp-showcase



The Witches Outcast

#43 / TL250

Academic Title

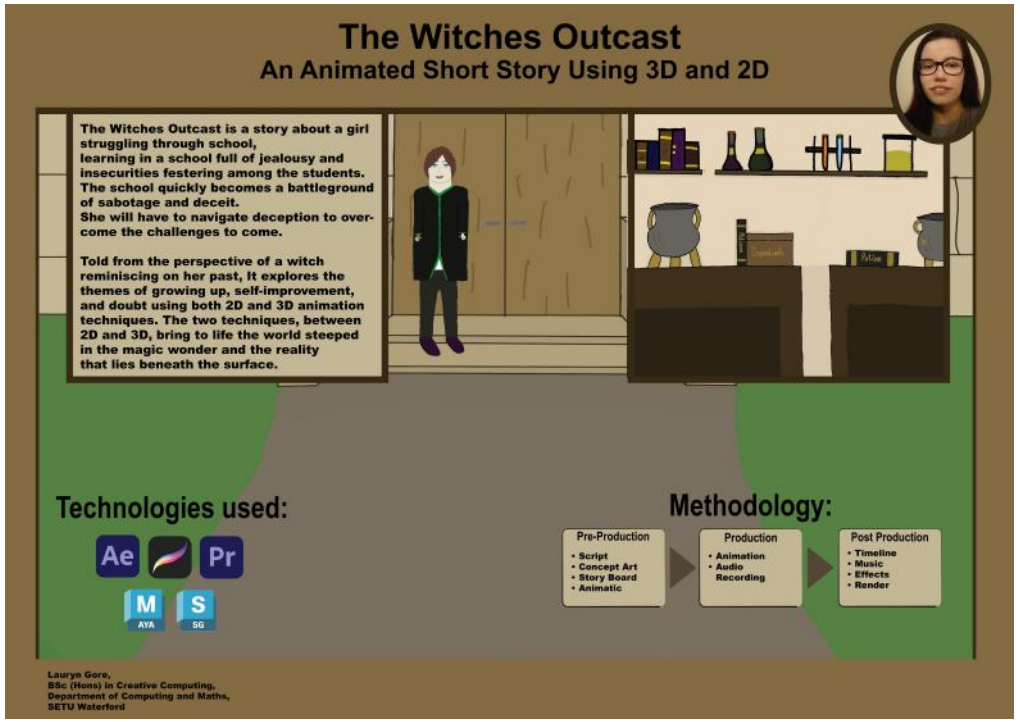
An Animated Short Story Using 3D and 2D

by Lauryn Gore

Project Areas

- Animation
- Media Development and Production

Project Supervisor
Jacqui Woods O'Brien



The Witches Outcast is a primarily 2D animated short story with a 3D prologue. It is a story about a girl struggling through school, learning in a school full of jealousy and insecurities festering among the students. The school quickly becomes a battleground of sabotage and deceit. She will have to navigate every trap, and every deception to overcome the challenges to come.
Told from the perspective of the witch reminiscing on her past, The Witches Outcast explores the themes of growing up, self-improvement, and doubt using both 2D and 3D animation techniques. The two techniques, between 2D and 3D, bring to life the world steeped in the magic wonder and the reality that lies beneath the surface.

Technologies: Procreate, Adobe Premiere Pro, Adobe After Effects

https://lauryngore.github.io

Runnin

#44 / TL250

Academic Title

2D-animated Lyric Video with Artist Interview

by Mia Gough

Project Areas

- Animation
- Digital Graphic Design

Project Supervisor
Clodagh Power

A 2D-animated lyric video for the song Runnin', which will be featured on an upcoming album, written and produced by my brother. The song is about two minutes long and can be described as upbeat and fast paced. This lyric video should be suitable for upload across various social media platforms, so that it can be used as promotional material for the song and album.
This project also involves an artist interview, where the artist will answer questions about the song, lyrics and his music career in general for a more in-depth perspective of the music making process.

Technologies: Adobe Animate, Adobe Illustrator, Adobe Premiere Pro, Adobe After Effects, Procreate

https://goughmia.wixsite.com/runnin

Ascend

#45 / TL250

Academic Title

Exploring Gameplay Mechanics in a Third-person Action-adventure Game Developed in Unreal Engine 5

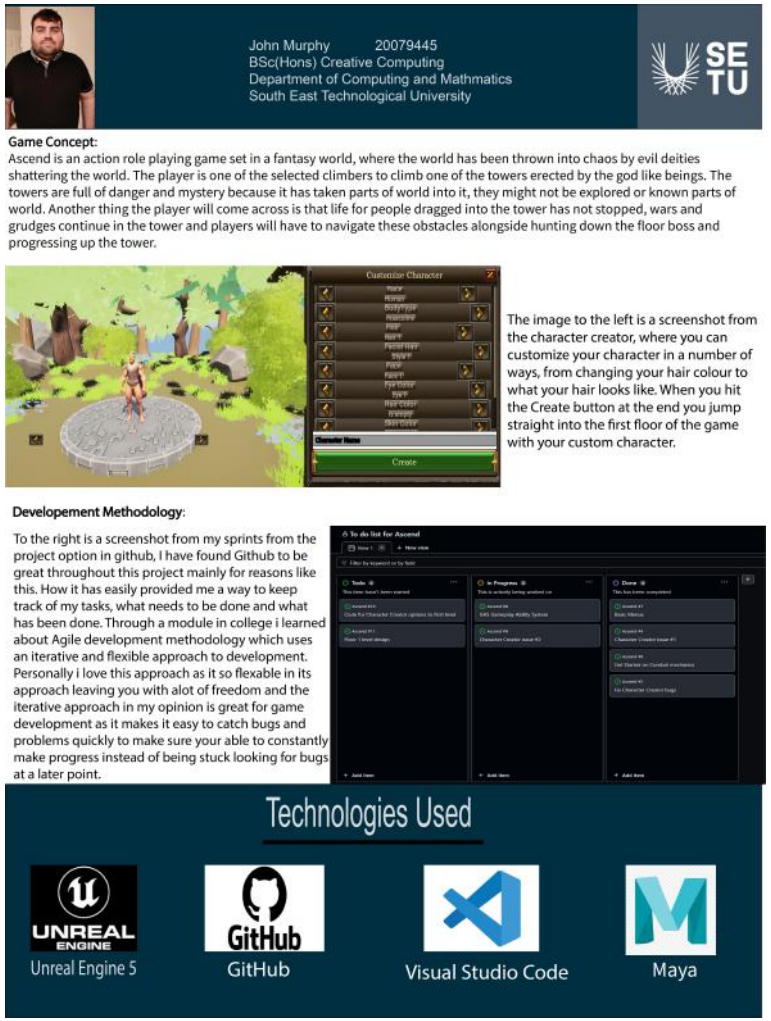
by John Murphy

Project Areas

- Game Development
- Media Development and Production
- Software Development: (Back End / Core / Front End)

Project Supervisor
Patrick McInerney

This project tests my design and directing skills in game design. The aim is a fully functioning, visually appealing, compelling story with fun game mechanics. I'll use Unreal Engine 5 for game development and Maya for personal assets. The vision I have is a third-person action RPG set in a fantasy world, where Evil deity-like beings have descended, creating a 'game' of climbing magical towers. Beyond this, they farm the life essence of those drawn into the tower. The player, a new victim, discovers an unexpected ally – a voice guiding and warning against the tower master.



Technologies: Unreal engine 5, Maya 2024, Github

https://20079445.wixsite.com/john-murphy-project

AmpleMart

#46 / TL250

Academic Title

Website for Selling Refurbished Electronic Gadgets

by Binu Peter

Project Areas

- Database and Analytics
- Software Development: (Back End / Front End / Web)

Project Supervisor
Sonya Hogan

This project aims at developing an e-commerce website, Amplemart, specializing in selling refurbished electronic devices. These items have been damaged during the production or shipping process and subsequently fixed.
The website is built using the MERN stack - a whole stack of technologies including MongoDB, Express, React, and Node.js from the basic level or scratch. The website will feature a full-featured shopping cart along with integrated online payment methods such as PayPal and online debit and credit payment methods.

Technologies: React JS, nodeJS, Express, Mongodb, Redux, Github

https://amplemartlandingpage.my.canva.site/home

Gracie Massage

#47 / TL250

Academic Title

Web Application with Booking System and Shopping Cart for a Small Start-up Massage Business

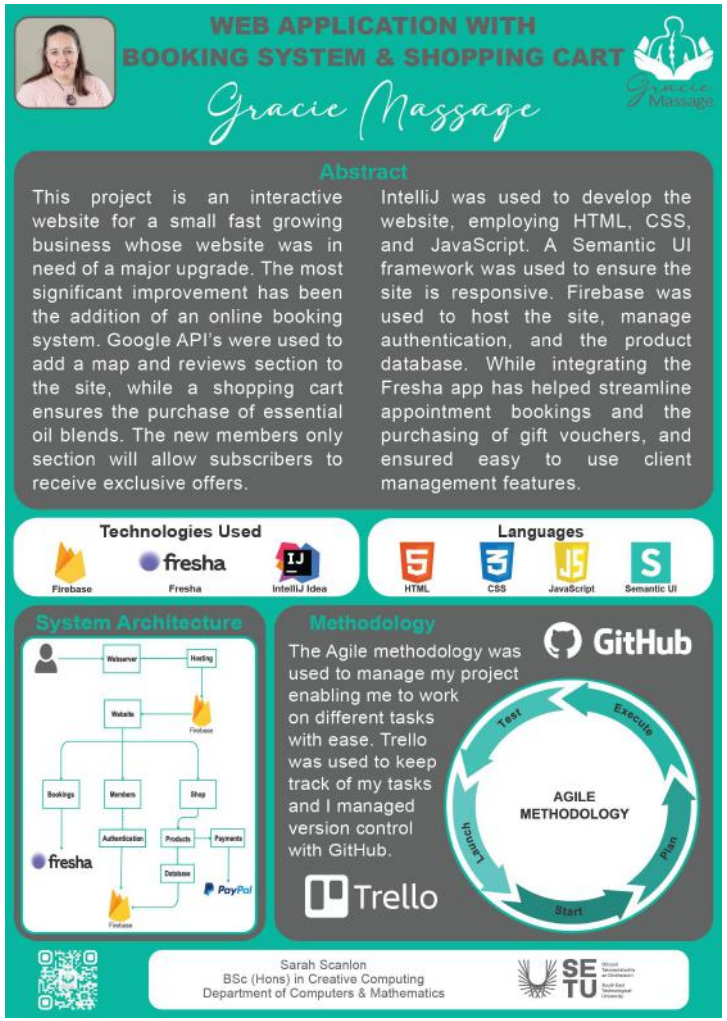
by Sarah Scanlon

Project Areas

- Software Development: (Back End / Front End / Web)

Project Supervisor

Deirdre O'Halloran



This project is a website for a local business - featuring an online booking system and integrated Google APIs for maps and reviews. A shopping cart was implemented for purchasing essential oil blends, while a new members-only section offers exclusive perks to subscribers. Developed using IntelliJ, employing HTML, CSS, and JavaScript, and ensuring responsiveness with the Semantic UI framework. Firebase was used for hosting and authentication management, along with product database management. Integration of the Fresha app further streamlined appointment bookings, and gift voucher purchases.

Technologies: IntelliJ, HTML, JavaScript, CSS, Semantic UI, Firebase

https://scnlsrh.wixsite.com/sarah-scanlon-fyp

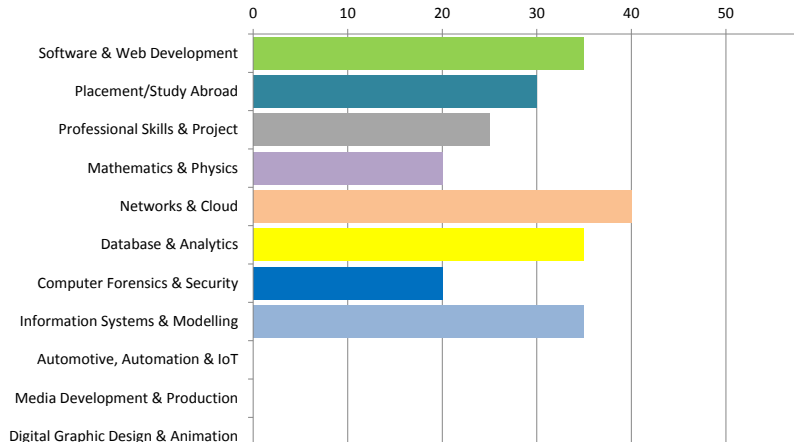
BSc (Hons) in Information Technology Management

The **BSc (Hons) in Information Technology Management** is a one–year add–on to the **BSc in Information Technology**. Across the four years of the programmes there is an emphasis on developing strong networking and cloud computing skills allied to a core of database and information systems knowledge.

The aim of the BSc (Hons) in Information Technology Management is

to provide graduates with a focus on the integration of heterogeneous computer systems and the management of various ICT services to support organisations to use diverse types of technology effectively and efficiently. It also aims to provide graduates with the knowledge and skills to handle and transmit data in a secure and safe manner across different types of networks.

The breakdown of course credits across the four years on these programmes is illustrated by the following chart.



A distinctive feature of this programme is that the final year project is worth 10 credits. There is also an emphasis on data–related and research–led projects as distinct from development–type projects.

Incognito Info: Fast or Last?

#37 / TL225

Academic Title

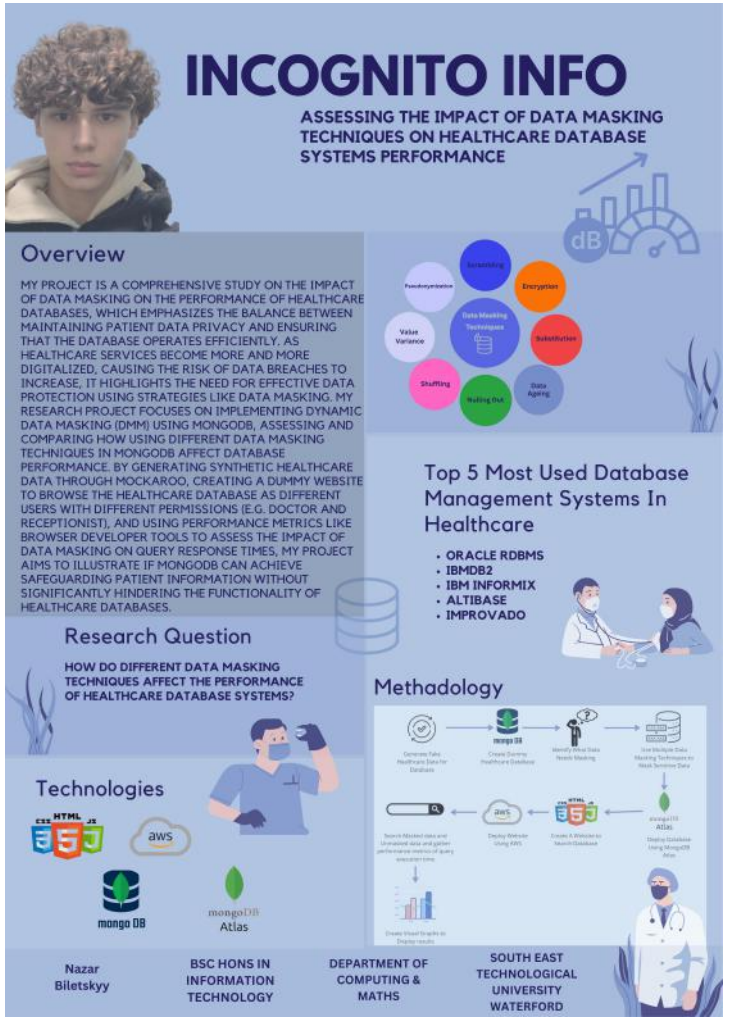
Assessing the Impact of Data Masking Techniques on Healthcare Database Systems Performance

by Nazar Biletskyy

Project Areas

- Database and Analytics

Project Supervisor
Sonya Hogan



My project is a comprehensive study on the impact of data masking on healthcare database performance, balancing patient privacy and efficiency. As digital healthcare services increase, so does the risk of data breaches, highlighting the need for effective data protection via data masking. My Research project focuses on implementing dynamic data masking(DDM) in MongoDB, assessing and comparing how different techniques affect performance. My goal is to determine if MongoDB can protect patient information without hindering the functionality of healthcare database systems.

Technologies: MongoDB, VsCode, AWS

https://nazarbill.github.io/Landing-Page/

Grapple Dash

#38 / TL225

Academic Title

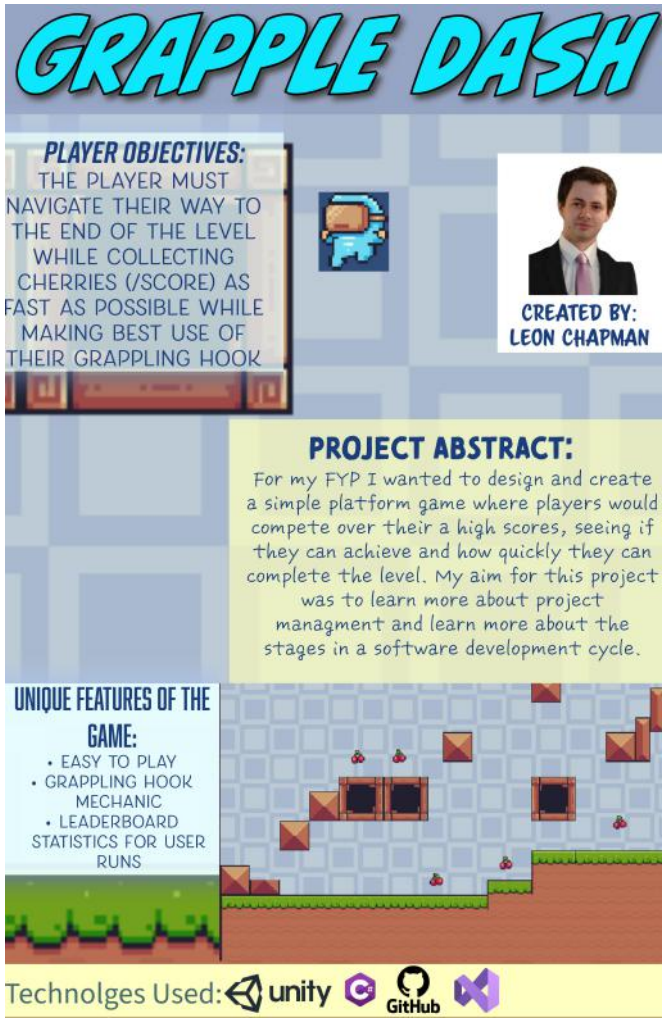
2D Platformer Game with Leader Board and Multiplayer Cooperative Play Functionality

by Leon Chapman

Project Areas

- Computer Security
- Information Systems and Modelling
- Internet of Things

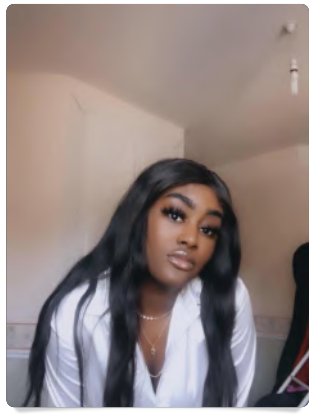
Project Supervisor
Rahul Mhapsekar



For my FYP I wanted to design and create a simple platform game where players would compete over how much of a high score they can achieve and how quickly they can complete the level. The player's main objective of my game is collecting as much score as possible while simultaneously attempting to reach the end of the level as quickly as possible. The data from the players, such as their scores and completion times, will then be uploaded to a database, where players can then compare and review their statistics.

Technologies: Unity, C#, Databases, SQL, GitHub, Visual Studio Code

https://20090657.wixsite.com/leons-fyp-project



The Chronicles of Carlson

Not presenting

Academic Title

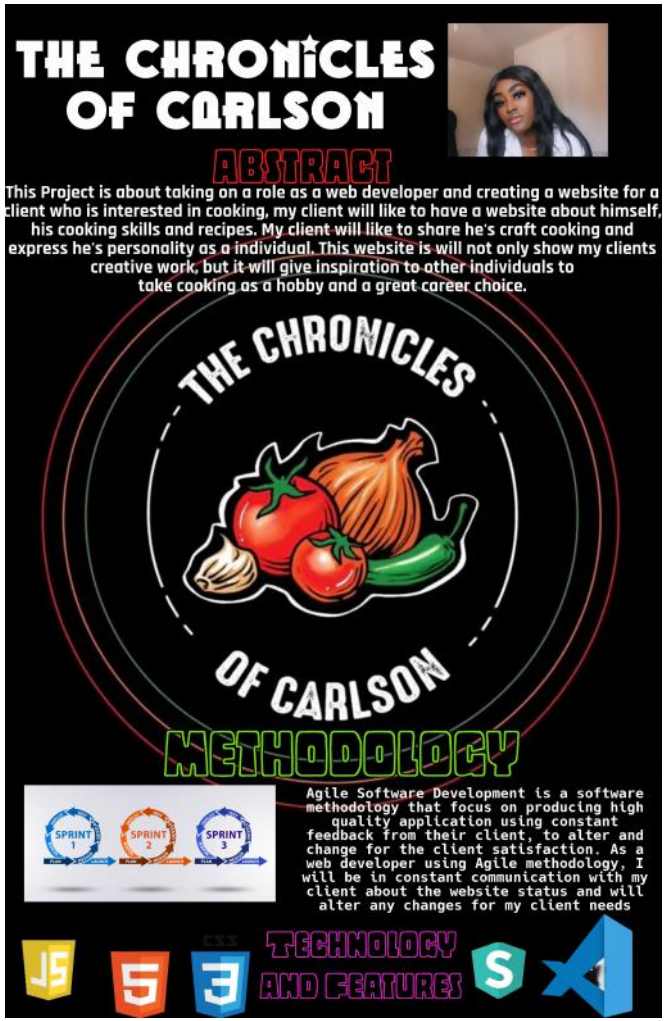
The Chronicles of Carlson Cooking Website

by Faith Iwere

Project Areas

- Software Development: (Front End)

Project Supervisor
Richie Lyng



This Project is about showcasing the creativity of cooking and the crafted work of one's interest in Cooking. The Chronicles of Carlson cooking portfolio is a cooking website about he's artist cooking and bringing he's cooking skills to life.
This Project is about taking on a role as a web developer and creating a website for a client who is interested in cooking, my client will like to have a website about himself, his cooking skills and recipes. My client will like to share he's craft cooking and express he's personality as a individual.
This website is will not only show my clients creative work, but it will give inspiration to other individuals to take cooking as a hobby and a great career choice.

Technologies: JavaScript, Visual Studio Code, Semantic UI, HTML and CSS

https://200904236.wixsite.com/faithlanding-page

Experimentation with Transkribus

#39 / TL225

Academic Title

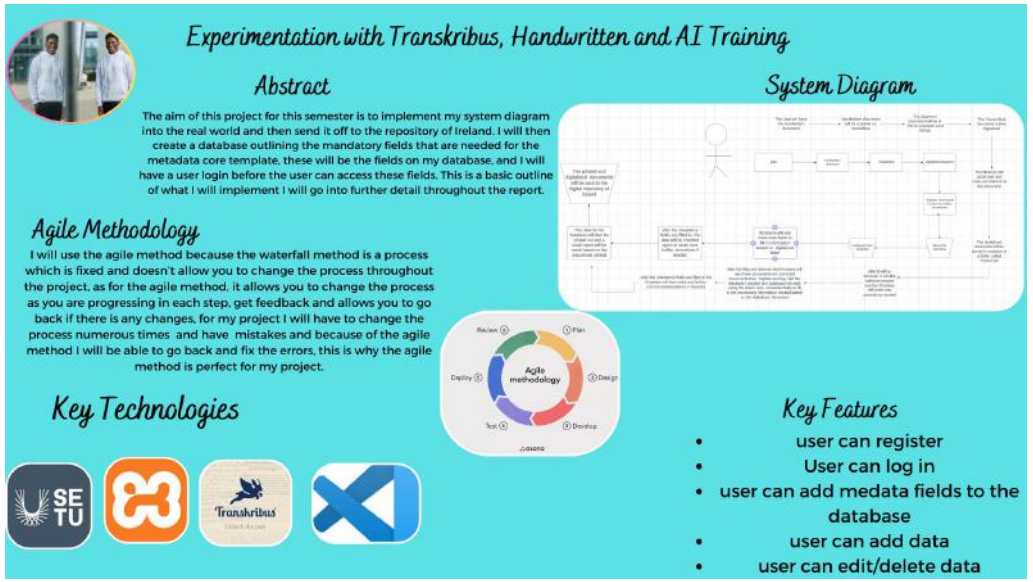
Experimentation with Transkribus, Handwritten Text and AI Training

by Mahfous Karimu

Project Areas

- Artificial Intelligence
- Personal Independent Project
- Work Based Project
- Software Development: (Web)

Project Supervisor
Brenda O'Neill



The aim of my project is to implement my system diagram into the real world and then send it off to the repository of Ireland, my database created will outline the mandatory fields that are needed for the metadata core template, these will be the fields on my database, and I will have a user login before the user can access these fields. This will be used by transcribing documents using transcribrus, I will use this software to transcribe ancient transcript into readable text, when this is complete and proofread, it will be used in my database and catalogued using the mandatory fields.

Technologies: transcribrus, xxmp, myphpadmin, vs code

https://mahfous17k.wixsite.com/final-year-project

Integrating Data for Compassionate Citie

Not presenting

Academic Title

Creation and Integration of a Database and Visualisation for Homeless Shelters in a City

by Osamudimen Olague

Project Areas

- Database and Analytics

Project Supervisor
Patrick McInerney

Homelessness in Ireland, especially in urban areas like Dublin, is a critical social issue where the homeless population grapples with challenges like access to shelters, coordination among service providers, and efficient resource allocation. The development of an integrated database and visualization system can significantly address these problems. This innovative approach aims to streamline the process of identifying available resources, improving coordination between agencies, and ensuring that aid reaches those in need more effectively.

Technologies: Power BI, SQL, visual studio code,

https://osasolague1.wixsite.com/my-site-1

Michael Cooley Collection

#40 / TL225

Academic Title

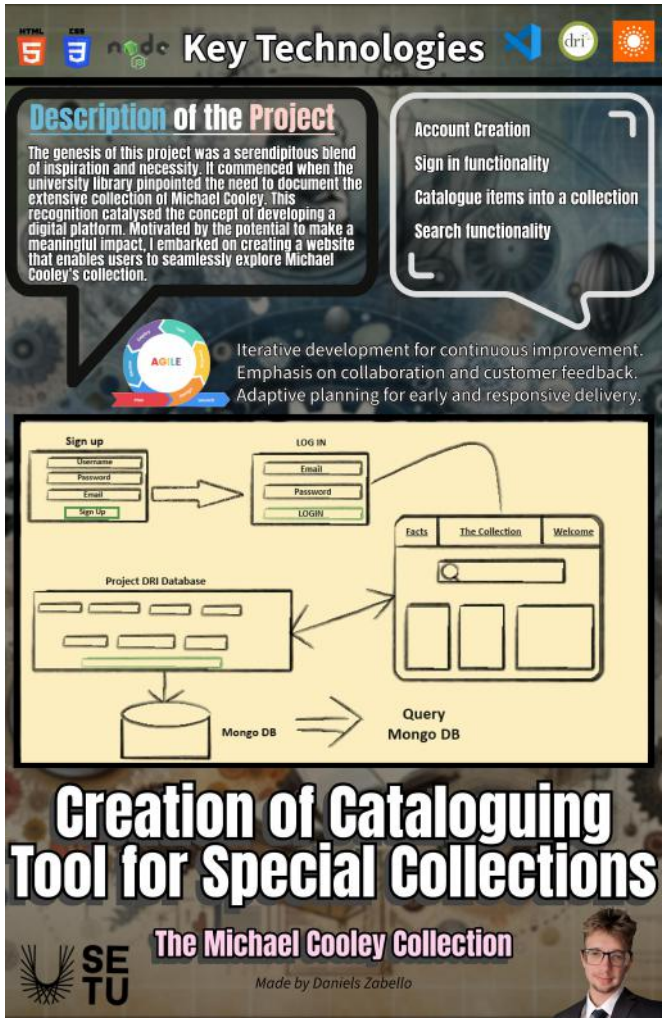
Creation of Cataloguing Tool for Special Collections

by Daniels Zabello

Project Areas

- DevOps
- Software Development: (Web)

Project Supervisor
Brenda O'Neill



The Michael J. E. Cooley Collection at South East Technological University serves as a gateway to exploring the intellectual legacy of Professor Cooley. This meticulously curated archive encompasses a wide array of materials, including research papers, lecture notes, and personal artifacts that collectively chronicle the academic journey of Michael Cooley. The collection offers a unique opportunity to investigate the profound impact of his work in the field of Human-Centred Systems and to trace the evolution of his ideas. Designed as a dynamic platform, the collection allows librarians to systematically catalogue and showcase the contributions of Michael Cooley, thus preserving and promoting his academic heritage.

Technologies: MongoDB, HTML, CSS, Dublin Core,

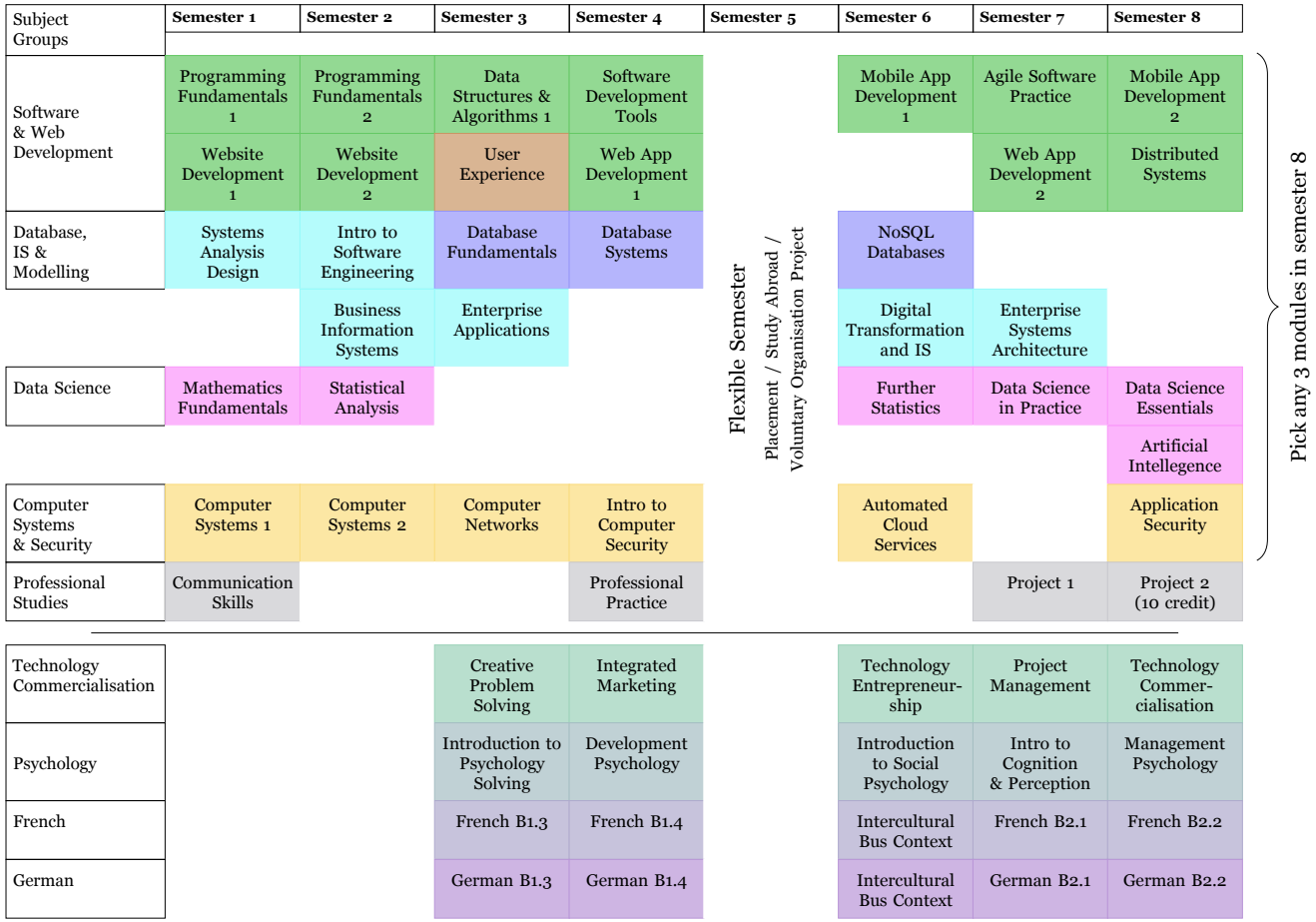
https://20094277.wixsite.com/my-site-2

BSc (Hons) in Software Systems Development

This programme is designed to equip students with the skillset required to work in an array of computing roles in industry. Students will develop secure software with the most modern methods of software technology for all areas of application, and they will have the ability to analyse, select, and utilise appropriate emerging technologies for the development of a software solution. They will have the ability to store, manage and mine data for businesses, and to develop systems to enable organisations to extract value from such data.

Companies in Ireland are seeking software developers who possess multi-disciplinary skills in the areas of Business, Psychology or Languages. With this in mind students will have the option to study those areas as elective option from year 2.

In year 3 there is an opportunity for students to complete work placement or study abroad. Studying abroad has become a popular choice for all our students especially those who have chosen the European language elective.



First Time Fit-humble Beginnings for Y

#48 / TL235

Academic Title

A Fitness Web Application Integrating Google Fitness Store API for Personalized User Insights

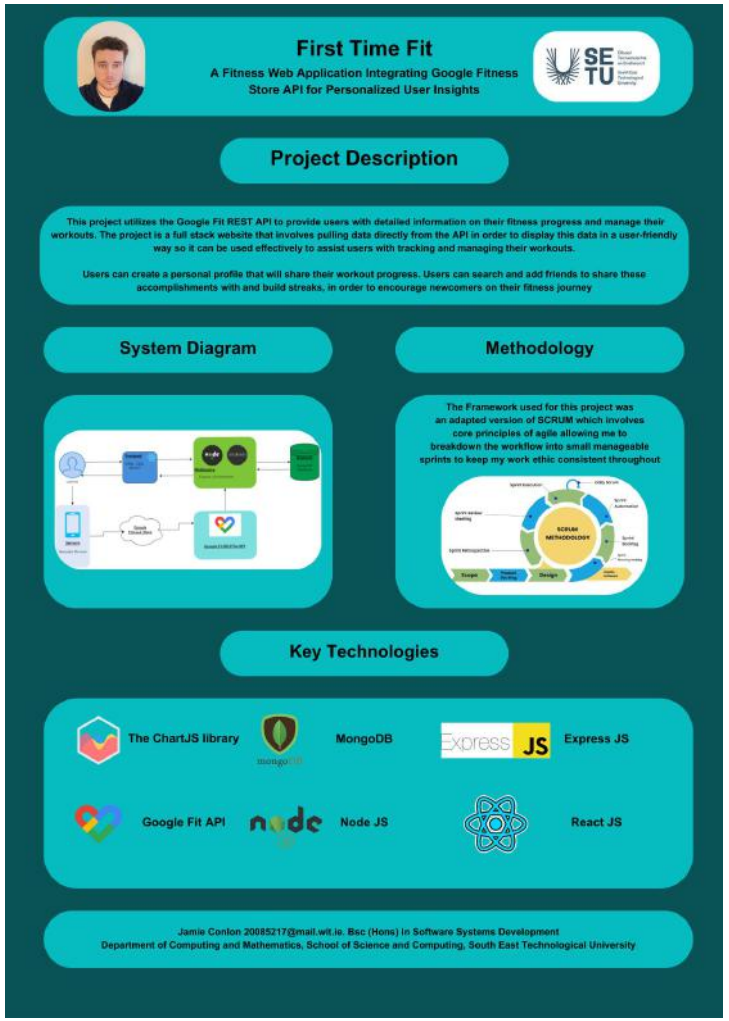
by Jamie Conlon

Project Areas

- Database and Analytics
- Software Development: (Back End / Core / Front End / Web)

Project Supervisor
Richie Lyng

The goal of this project is to utilize a fitness API to provide users with detailed information on their fitness progress and manage their workouts. I am creating a Web Application that will involve pulling data directly from an API in order to display this data in a user-friendly way and so it can be used effectively to assist users with tracking and managing their workouts. The idea is to provide a product that can act as a tool for fitness enthusiasts and newcomers to this area. The project will provide functionality for users to log in and out and have the ability to read and favourite workout plans provided by the app. They will be able to create a personal profile that will share their workout progress and will be able to search and add friends to share these accomplishments with.



Technologies: React, MongoDB, NodeJS, Javascript, ChartJS, Google Console, FitnessAPI

https://jamconn.github.io/

Sealed

#49 / TL235

Academic Title

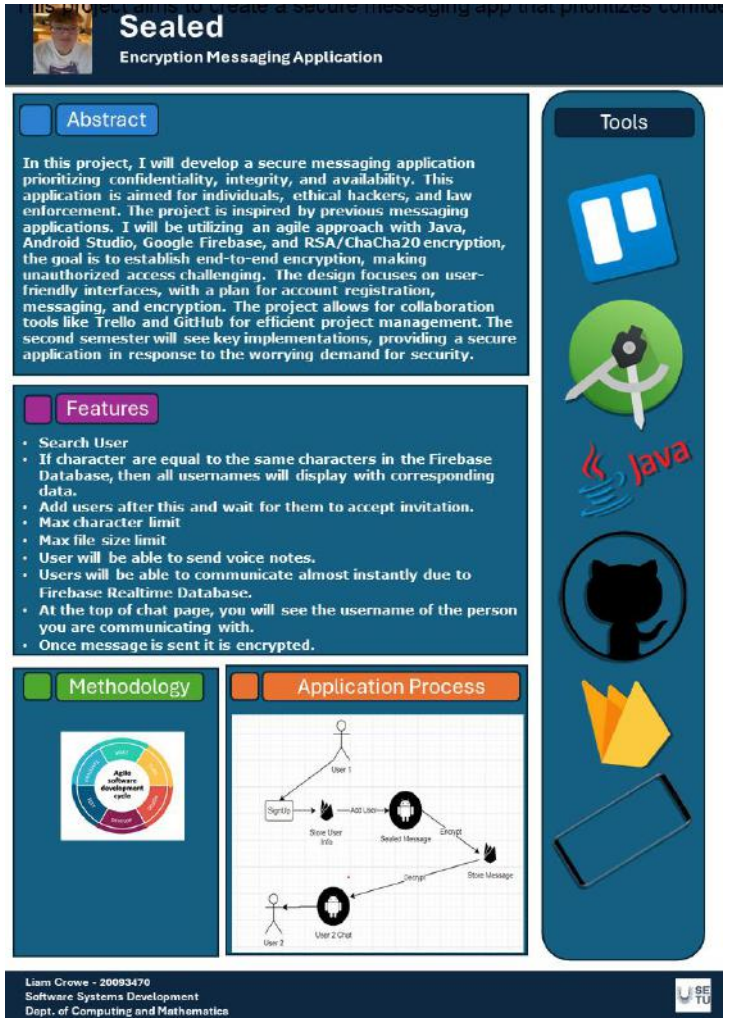
Encryption Messaging Application

by William Crowe

Project Areas

- Database and Analytics
- Software Development: (Mobile Native)

Project Supervisor
Catherine Fitzpatrick



In this project, I will develop a secure messaging application prioritizing confidentiality, integrity, and availability. This application is aimed for individuals, ethical hackers, and law enforcement. The project is inspired by previous messaging applications. I will be utilizing an agile approach with Java, Android Studio, Google Firebase, and RSA/ChaCha20 encryption, the goal is to establish end-to-end encryption, making unauthorized access challenging. The design focuses on user-friendly interfaces, with a plan for account registration, messaging, and encryption. The project allows for collaboration tools like Trello and GitHub for efficient project management. The second semester will see key implementations, providing a secure application in response to the worrying demand for secur

Technologies: Java, Google Firebase, Android Studio, Trello, Emulators

https://liamcrowe2502.wixsite.com/sealed

Family Trip

#50 / TL235

Academic Title

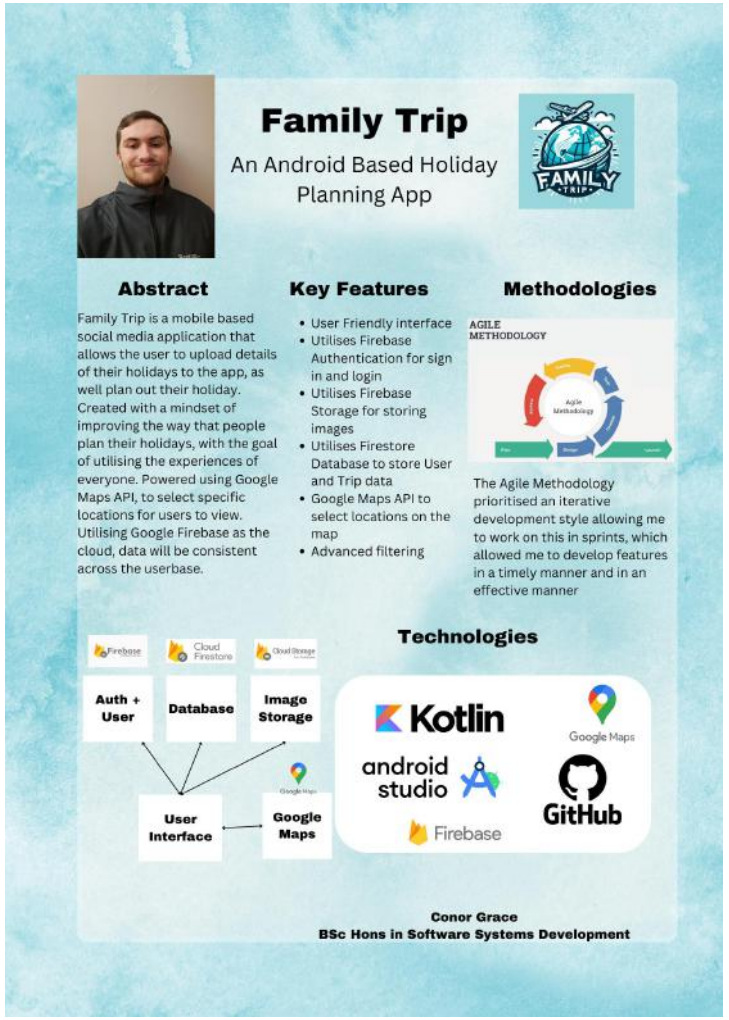
Android Based Social Media Holiday Planning Application

by Conor Grace

Project Areas

- Software Development: (Mobile Native)

Project Supervisor
Thakshila Wedage



Family Trip is an android based social media application specifically designed for the planning and sharing of holiday-related posts. Usually, when people decide to do some research on potential holidays, they plan them off travel blogs, by word of mouth, articles from tourism boards, or from checking what destinations are highly rated in google maps. Using Family Trip, users will be able to view other people's holidays that were shared to gather information and use their experiences to efficiently plan their own, whether it be the cost of the holiday, or an efficient day by day plan.

Technologies: Android Studio, Github, Kotlin, Firebase Authentication, Firebase Storage

https://cjamesgrace.wixsite.com/familytripproject

Dog Breed Identifier

#51 / TL235

Academic Title

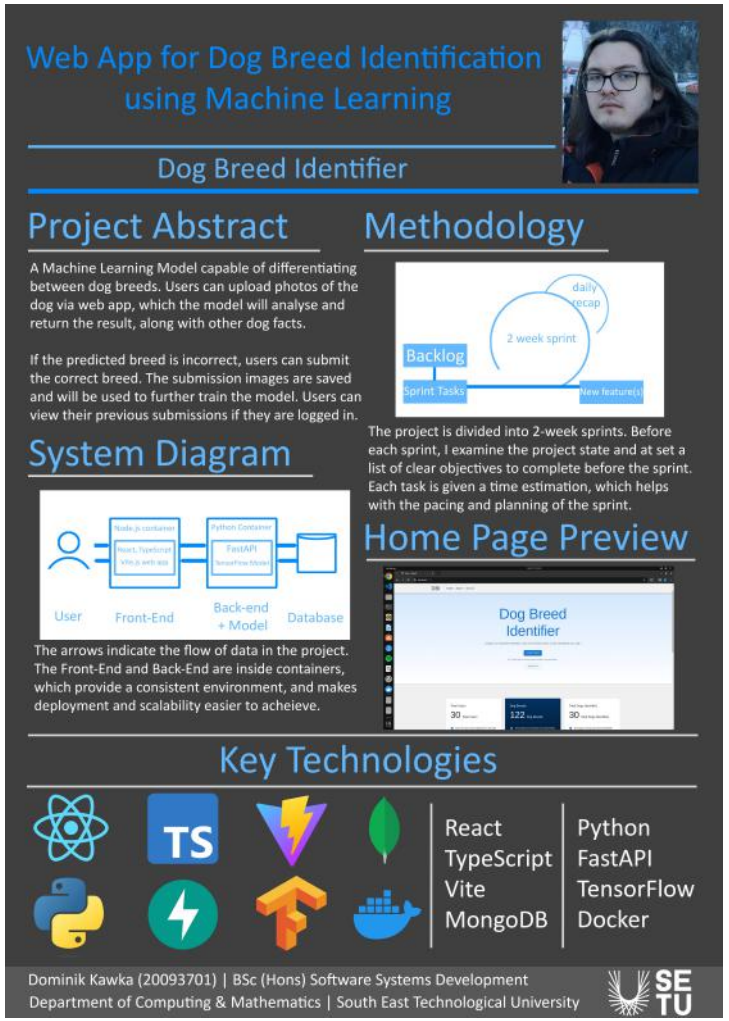
Web App for Dog Breed Identification Using Machine Learning

by Dominik Kawka

Project Areas

- Software Development: (Back End / Core / Front End / Web)

Project Supervisor
Michael McMahon



The project goal is to build a Machine Learning model capable of differentiating between dog breeds. The user is able to upload photos of their dog via web app, which will then be fed into the model, returning the predicted breed, along with extra info.
If the pred. breed is wrong, the user may submit feedback. Users can view their previous submissions.
The project follows an agile-scrum workflow, breaking the project down into 2 week sprints, using Gantt charts as a general outline of the entire development process.
Find out more about your pets, and characteristics of their breed.

Technologies: Python, TensorFlow, FastAPI, React, MongoDB, Vite.js, Docker

https://dominikkawka.github.io/

ReactStock: Dynamic Inventory Management

#52 / TL235

Academic Title

Web Application-based Inventory Stock Management System

by Maciej Marchel

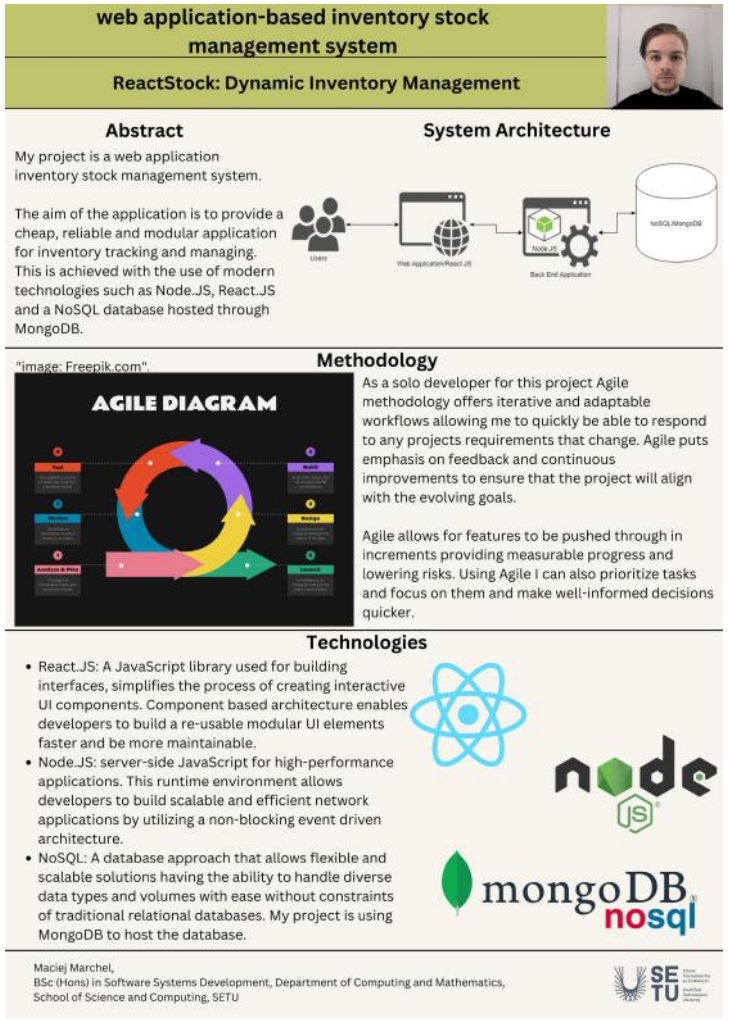
Project Areas

- Software Development: (Back End / Front End)

Project Supervisor

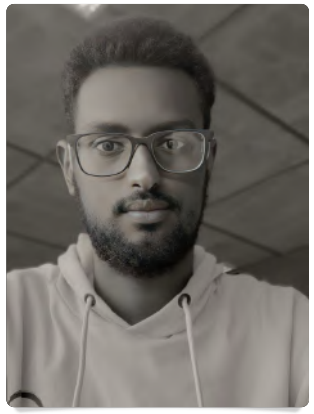
Lizy Abraham

My project using technologies such as Node.js, MongoDB, and React.js aims to achieve the goal of effective inventory tracking and control using a web application to do so. React.js is able to improve the user experience to guarantee a dynamic and responsive user interface for easy use and learning. Node.js is used as the backend and allows for the server-side logic and a smooth database connectivity. Using MongoDB, a NoSQL database it is able to provide an adaptable and scalable data storage. With a easy to use web interface this web app provides a stable and scalable platform for management.



Technologies: React.js, Node, js, MongoDB

https://maciejmarchel14.wixsite.com/fianl-year-project-1



Hydration Mate: Your Personal Hydration

#53 / TL235

Academic Title

Hydration Mate: An Android Application for Personalized Water Intake Tracking

by Maxamed Maxamed

Project Areas

- Software Development: (Mobile Native)

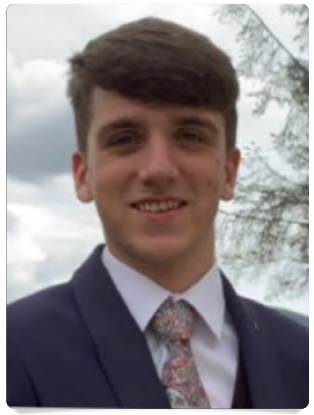
Project Supervisor

Muhammad Iftikhar Umrani

Hydration Mate is a friendly app for your phone that helps you remember to drink enough water every day. It's like a helpful buddy that reminds you to take sips and tracks how much water you drink. The app is easy to use and shows you simple charts so you can see how well you're doing. Whether you're into fitness or just want to stay healthy, Hydration Mate is here to make sure you don't forget to drink water. Let's make staying hydrated easy and fun together! Technologies key: Kotlin, Android Studio, Android native frameworks, local storage, Firebase.

Technologies: Kotlin, Android Studio, Android native frameworks, local storage, Firebase.

https://maxamed-maxamed.github.io/FYP-Hydration-app-Mate/



Fitness Fixed

#54 / TL235

Academic Title

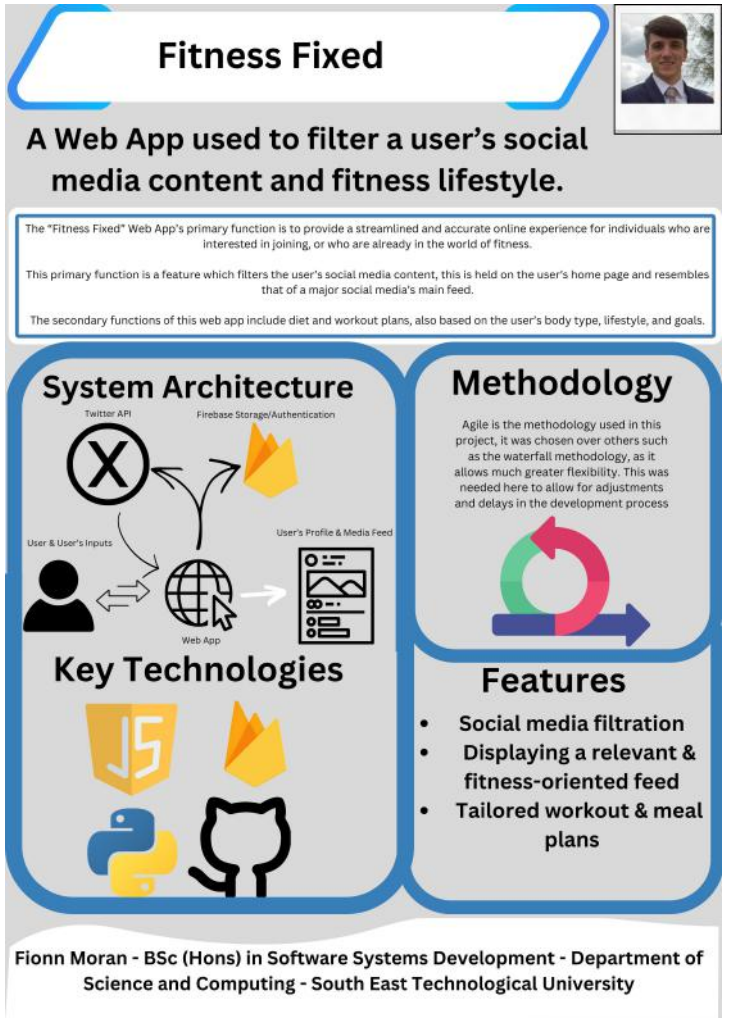
A Web App Used to Filter a User's Social Media Content and Fitness Lifestyle

by Fionn Moran

Project Areas

- Cloud Computing
- Software Development: (Back End / Core / Front End / Web)

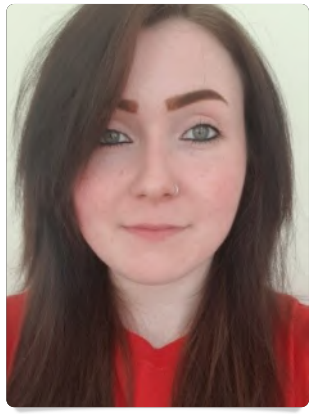
Project Supervisor
Sonya Hogan



The "Fitness Fixed" Web App primary function is to provide a streamlined and accurate online experience for individuals who are interested in joining, or who are already in the world of fitness.
This primary function will be a feature which filters the user's social media content, this will be held on the user's home page and resembles that of twitter's main feed.
The secondary functions of this web app will include diet and workout plans, also based on the user's body type, lifestyle, and goals.

Technologies: JavaScript, Python, Github, Trello, Firebase

https://github.com/fionn-moran/FitnessWebApp



Bookmark-it: Power in Self-publishing

#55 / TL235

Academic Title

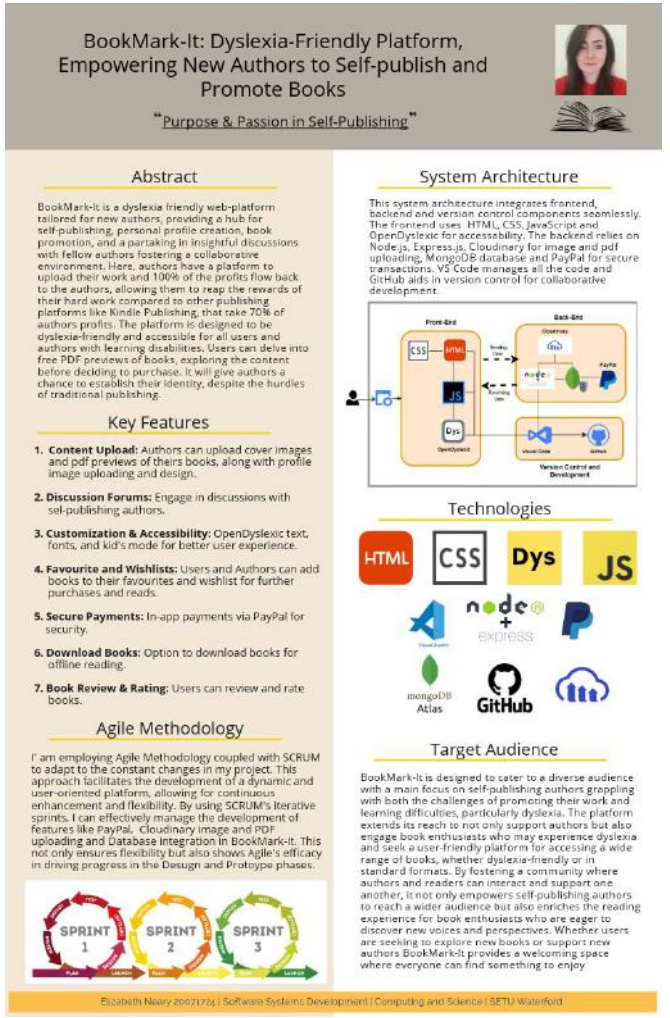
A Dyslexia-friendly Platform, Empowering New Authors to Self-publish and Promote Books

by Elizabeth Neary

Project Areas

- Software Development: (Back End / Front End / Web)

Project Supervisor
Michael McMahon



BookMark-It: Revolutionizing the publishing scene for new authors, this dyslexia-friendly web platform is a comprehensive hub for self-publishing, personal profile creation, book promotion, and engaging discussions. Authors retain 100% of their profits, fostering a supportive and collaborative environment. With a focus on accessibility and availability to a wide range of books, BookMark-It empowers all users, especially those with learning disabilities. BookMark-It provides authors with the opportunity to establish their unique identity and overcome the challenges of traditional publishing.

Technologies: HTML, CSS, Javascript, Node, Express, MongoDB, OpenDyslexic, PayPal, Github, Visual Studio

https://lizne.github.io/

Giggly

#56 / TL235

Academic Title

Social Networking Platform Facilitating Dynamic Joke Sharing and Engaging User Interaction

by Evan Sullivan

Project Areas

- Software Development: (Back End / Core / Front End / Mobile Native)

Project Supervisor
Rizvi Syed

Giggly, a Android application. Giggly prioritizes humor, interaction and and user privacy, offers features like anonymous joke sharing, verification, and allows editing profiles. The app has post and user interaction and features a search feature. Giggly uses Firebase authentication to provide real-time security, Realtime Database to store posts and user data, this allows to quickly send and receive to data. The project was created using Agile methodology with multiple sprints involved. Giggly is a lively and secure platform that offers a unique experience focused on laughter and connection.

Technologies: Java, Android studio, Firebase Authentication, Firebase Realtime database, Firebase Storage

https://evansullivan007.wixsite.com/giggly

BSc (Hons) in Software Systems Practice (NUIST)

The aim of the BSc (Hons) in Software Systems Practice (NUIST) is

to provide overarching and theoretical frameworks so that graduates will have knowledge of advanced concepts in software development methodologies and disciplines. They will be able to select appropriate paths in designing complex software or in developing computer-based systems. As individuals, they will work effectively independently, but will also experience team work, with the challenges and benefits this can offer. At the heart of the programme is an emphasis on practical development of computing skills, underpinned by a strong theoretical reasoning.

The programme aims to provide an opportunity for students who pursue three years successful education on the NUIST BSc in Software Engineering, the opportunity to complete their fourth year of education in a dedicated one-year add-on degree in SETU. On successful completion of this fourth year in SETU, the student would be awarded a BSc (Honours) in Software Systems Practice from SETU as well as a BSc in Software Engineering from NUIST.

Goods Galore

Not presenting

Academic Title

Spring Boot Powered Goods Supply Platform Management System

by Jiahan Chen

Project Areas

- Database and Analytics
- Software Development: (Back End / Front End / Web)

Project Supervisor
Jacqui Woods O'Brien

"Goods Galore: Spring Boot-Powered Goods Supply Platform" is aimed at re-engineering the management and distribution process of the brand suppliers by simplifying it through a centralized web platform. Within the frame of "Goods Galore," a specialized platform devoted to brand suppliers, can allow them to upload, manage, and list their wares without competition from general B2B platform users who can also become sellers. This system can solves the inventory and logistics challenges faced by the brand suppliers.

Technologies: Springboot, Vue.js; Kafka, Mysql, Mybatis-plus, Redis

https://dante-cjh.github.io/fyp-goods-galore/landing%20page/

Wasteland Odyssey

Not presenting

Academic Title

A 2D Roguelike Adventure Game on Windows Computer

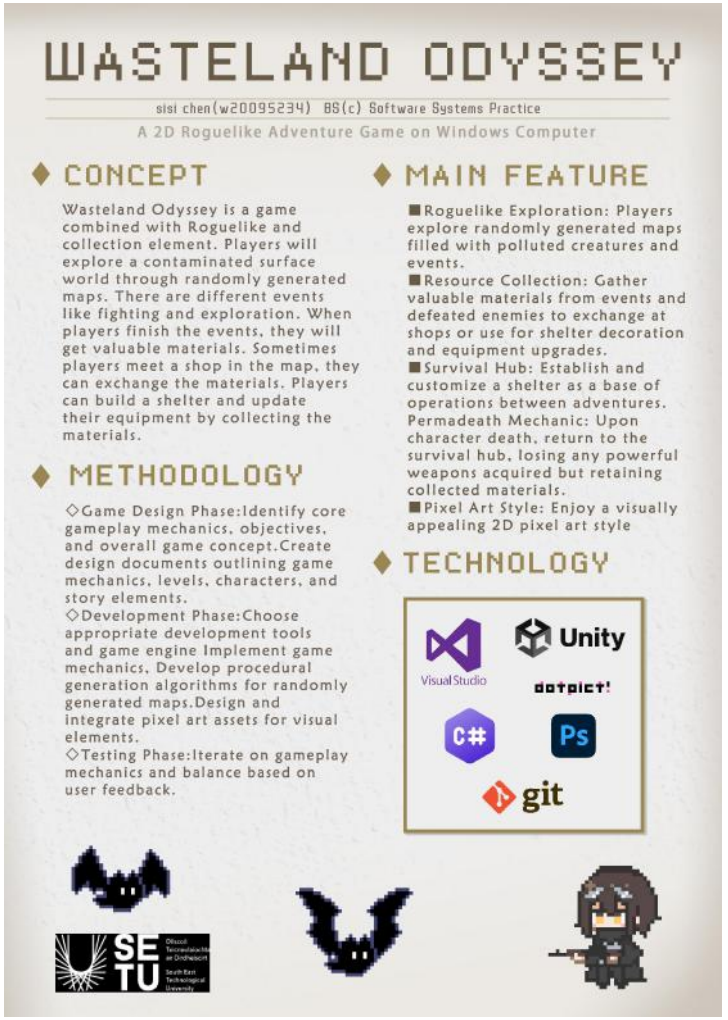
by Sisi Chen

Project Areas

- Game Development

Project Supervisor

Patrick McInerney



“Wasteland Odyssey” is an engaging game that combines Roguelike and collection elements to create an immersive adventure in a contaminated surface world. Players begin their journey on a floating island, where they establish their survival hub before venturing into contaminated territories. Each exploration leads players through randomly generated maps filled with challenges such as battling mutated creatures and gathering resources. Upon completion or death, players return to their survival hub, utilizing collected materials to upgrade equipment and enhance their shelter for future adventures.The target audience for “Wasteland Odyssey” includes players interested in adventure, action, and Roguelike games, as well as those drawn to pixel art aesthetics and collection elements.

Technologies: c#, unity, photoshop, git, dotpict, visual studio

https://github.com/Bdeparture

Recipe Web App

Not presenting

Academic Title

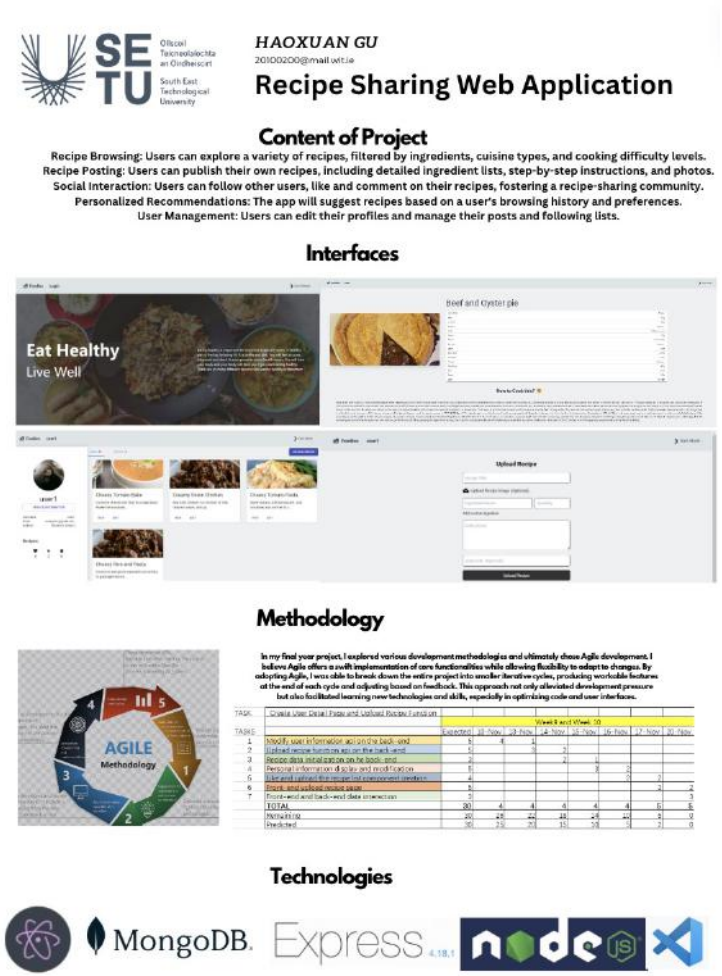
Recipe Sharing Web Application

Project Areas

- Software Development: (Mobile Hybrid)

Project Supervisor
Michael McMahon

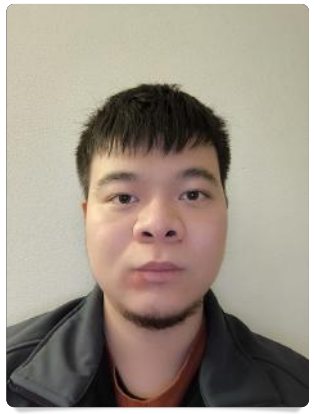
by Haoxuan Gu



The project is meticulously crafted with React, Express, and MongoDB. React powers frontend development, facilitating swift UI design for an immersive browsing experience. Express orchestrates backend processes, guaranteeing efficient logic handling and seamless data interaction. MongoDB serves as the reliable NoSQL database, proficiently storing user details and recipes. Collectively, these cutting-edge technologies ensure unparalleled scalability and adaptability, culminating in a robust, user-centric platform for seamless recipe sharing and culinary exploration.

Technologies: React, Express, MongoDB

https://github.com/foxeatbread/Fyp.git



Student Spoon

Not presenting

Academic Title

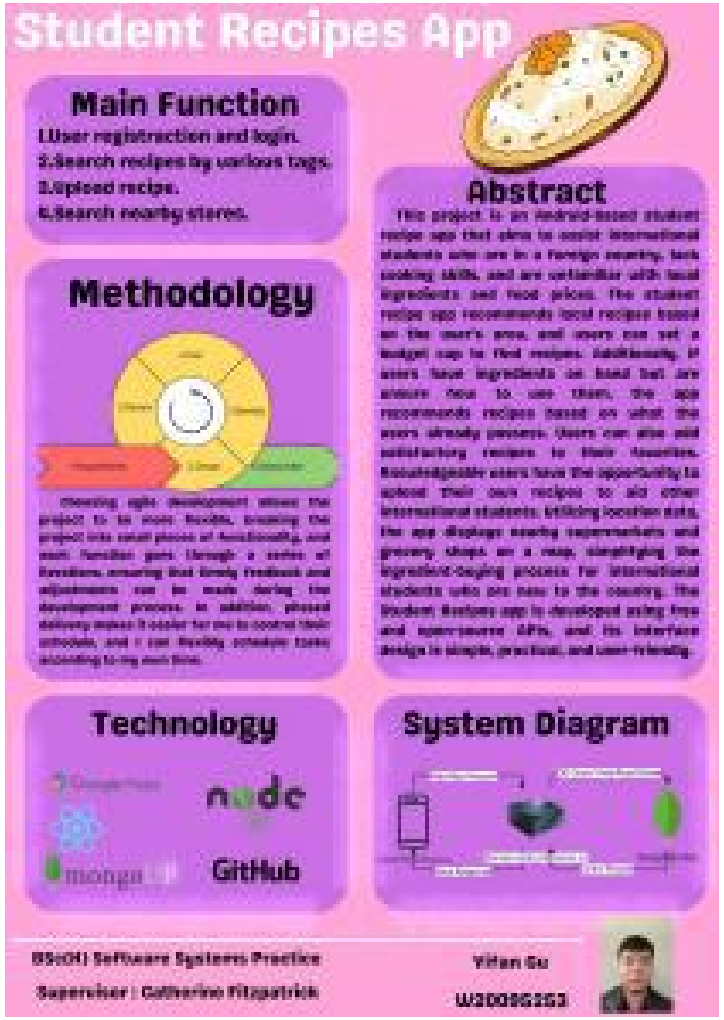
Students Recipe App

by Yifan Gu

Project Areas

- Software Development: (Mobile Native)

Project Supervisor
Catherine Fitzpatrick



This project is an Android based student recipe app which aims to help international students who are in a foreign country which lack cooking skills and don't know about local ingredients and food prices. The student recipe app can recommend local recipes based on the user's area, and the user can also set a budget cap to find recipes, or if the user has ingredients on hand but isn't sure how to cook, the student recipe app can recommend recipes based on what the user already has. User can also upload their own recipes to help other international students. By using the location, the app will show the supermarkets and grocery shops near the user on the map to make it easier for international students to buy ingredients when they are new to the country.

Technologies: node.js, JavaScript, MongoDB, Git, ReactNative

https://yifan113.github.io/

FeastClick

Not presenting

Academic Title

User-centric Design and Development for Online Restaurant Ordering System

by Yisi Huang

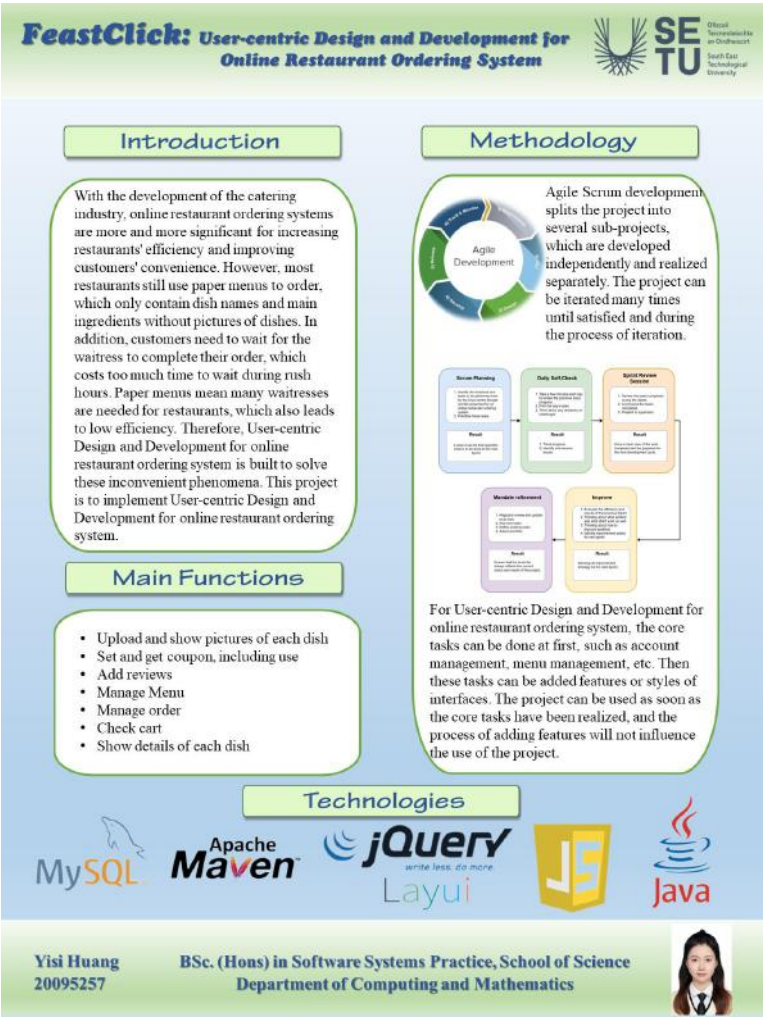
Project Areas

- Software Development: (Back End / Front End / Web)

Project Supervisor

Opeyemi Bamigbade

The project uses javascript, layui, and jQuery as the main development technologies for the front-end, Javaweb for the back-end, and MySQL for the database. In this project, three main improvements are developed. The first one is showing pictures for each dish, administrators can upload pictures when editing the menu, and then users can see them on the menu. The second one is that administrators can set coupons, and users can receive them and use them. The third one is users can add reviews after finishing the order which will show to the restaurant.



Technologies: JavaScript, jQuery, layui, Java, MySQL

https://yisihuang.github.io/

TruckTrack: Smart Trucking Data Power

Not presenting

Academic Title

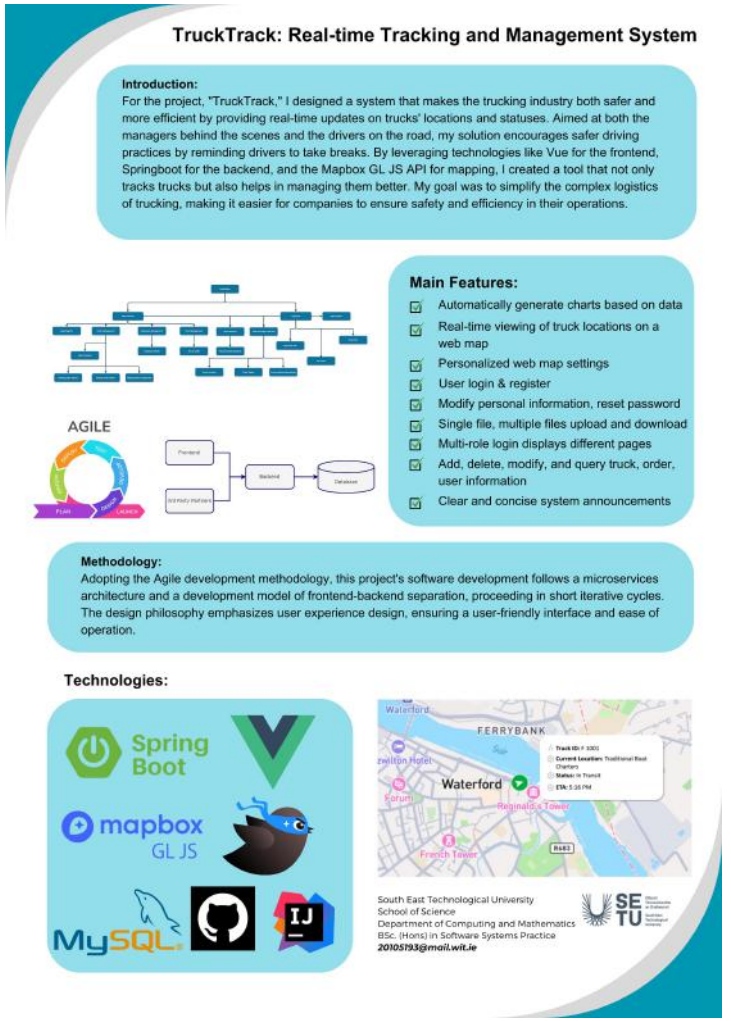
TruckTrack: Fleet Tracking & Management

by Ruida Jiang

Project Areas

- CI/CD & Testing
- Information Systems and Modelling
- Software Development: (Back End / Core / Front End / Web)

Project Supervisor
Syed Rizvi



For the project, “TruckTrack,” I designed a system that makes the trucking industry both safer and more efficient by providing real-time updates on trucks’ locations and statuses. By leveraging technologies like Vue for the frontend, Springboot for the backend, and the Mapbox GL JS API for mapping, I created a tool that not only tracks trucks but also helps in managing them better. My goal was to simplify the complex logistics of trucking, making it easier for companies to ensure safety and efficiency in their operations.

Technologies: Vue, Springboot, MyBatisPlus

https://github.com/RuidaJiang33/fyp-TruckTrack

GameTrack

Not presenting

Academic Title

Player Data Analysis Management System

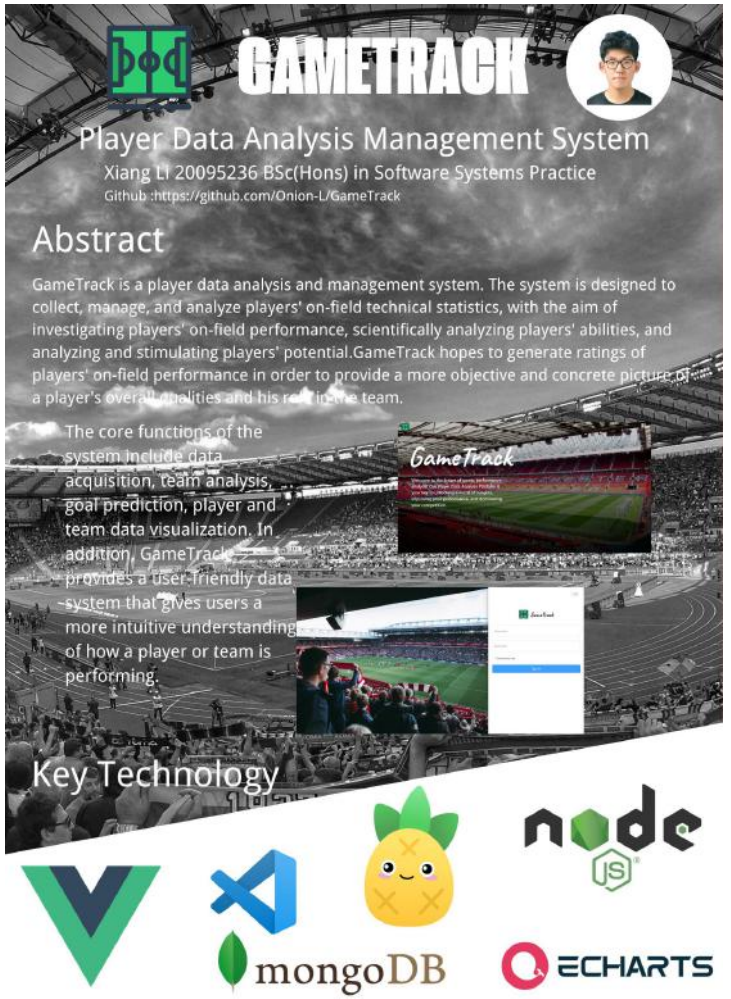
by Xiang Li

Project Areas

- Database and Analytics
- Software Development: (Back End / Front End)

Project Supervisor

Oeyemi Bamigbade



GameTrack is a player data analysis management system whose goal is to select players more objectively. The main objective of the system is to collect, collate, and analyze comprehensive on-field technical statistics to gain an in-depth understanding of a player's performance, scientifically assess their ability, and unlock their potential. The core functions of the system include data acquisition, team analysis, goal prediction, player and team data visualization. In addition, GameTrack provides a user-friendly data system that gives users a more intuitive understanding of how a player or team is performing.

Technologies: Vue, Pinia, Pandas, node.js, MongoDB

https://www.github.com/Onion-L/GameTrack

Lovely Transfer

Not presenting

Academic Title

Neural Network Based Image Style Transfermation Platform

by Yangqing Li

Project Areas

- Artificial Intelligence
- Database and Analytics
- Software Development: (Back End / Front End)

Project Supervisor
Syed Rizvi

Now that art is more integrated into everyday life, artists are increasingly exploring AI to blend technology and art. My final year project, LovelyTransfer, was an AI-based image style transfer web application using VGG16 that involved front-end and back-end development using React.js and Python. It provides various style transformations to foster creativity and employs pre-trained models to enhance responsiveness and usability. This is a practical application of AI in art, providing a platform for users to explore their artistic capabilities through technology.

Technologies: React.js, python, VGG16, Tensorflow, MySQL, VSCode

https://yvonneliyq.github.io/

AgroGuard

Not presenting

Academic Title

An Agricultural Online Community Platform with Target Detection-based Plant Disease Detection

by Haopeng Liang

Project Areas

- Artificial Intelligence
- Database and Analytics
- Software Development: (Back End / Front End / Web)

Project Supervisor
Sinead O'Neill

This article introduces an agricultural platform using an AI hybrid model based on target detection for plant disease detection. It combines precise image analysis for quick and accurate disease identification, enhancing disease management. The platform also serves as a hub for farmers and experts to exchange knowledge and strategies, fostering a collaborative environment. This synergy between advanced technology and community engagement aims to improve agricultural productivity and plant health, illustrating a significant step forward in agricultural innovation and shared learning.

Technologies: Pytorch, Vue.js, Springboot, Opencv, Kafka, Mongodb, Dubbo

https://agcy.github.io/fyp-AgroGuard/landing%20page/

Base Defense: The Last Stand

Not presenting

Academic Title

Seek to Survive: A Comprehensive Design and Development of a Side-scrolling Survival Game Incorporat

by Long Liu

Project Areas

- Game Development

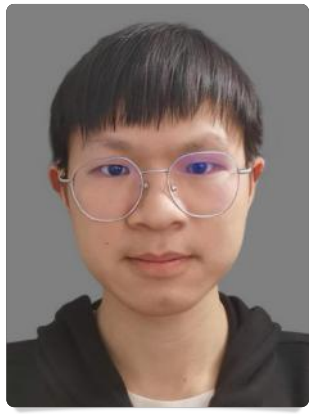
Project Supervisor

Sinead O'Neill

Seek to Survive merges strategic base-building with intense tower defense in a side-scrolling adventure. Players upgrade bases, fend off enemy onslaughts, and navigate through upgrades and attacks that intensify over time. This game invites players into a pixelated world where strategy and quick thinking are key to survival. The player's journey is filled with challenges that test their ability to defend, upgrade, and expand their stronghold against waves of enemies. Utilizing materials collected from fallen foes, players enhance their base's defenses and capabilities, aiming for victory by outsmarting enemy attacks and fortifying their bastion against the relentless siege.

Technologies: Godot, GDScripts, C#,

https://1730177143.github.io/FYP_doc/



Sing with Vocarina

Not presenting

Academic Title

Music Producing and Sharing Application with Voice Synthesizing and Tuning

by Yiwei Liu

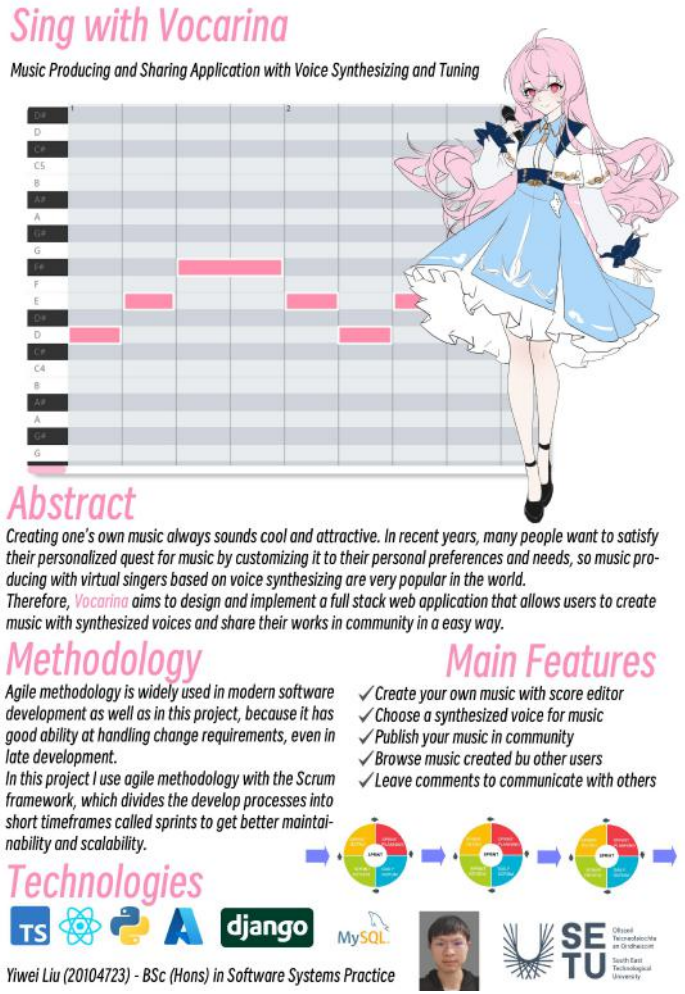
Project Areas

- Software Development: (Core / Front End / Web)

Project Supervisor

Lasantha Thakshila Wedage

Creating one's own music always sounds cool and attractive, especially when achieving this by producing music with virtual singers that based on voice synthesizing.
This project, called Vocarina, is a full stack web application that allows users to create music with synthesized voices and share their works in community. This project aims to provide a visualized, interactive, straightforward and user-friendly platform that enables people to satisfy their personalized quest for music by customizing it to their personal preferences and needs.
The front-end is developed with React and TypeScript, while the back-end is implemented with Django framework and Python. MySQL database is used to store data.



Technologies: TypeScript, React, Python, Django, MySQL, Azure

https://lyw02.github.io/vocarina-landing-page/

GreenSort: Better Sorting and Recycling

Not presenting

Academic Title

Android Based Garbage Sorting and Recycling App

by Yingying Lu

Project Areas

- Software Development: (Mobile Native)

Project Supervisors

Sinead O'Neill, Siobhan Roche

The Android app GreenSort simplifies waste sorting and recycling through three modules: waste information, waste type query, and waste collection point positioning. It utilizes advanced image recognition and positioning technology to identify waste categories and locate recycling centers for a more sustainable environment. Additionally, it provides real-time data and a comprehensive database of waste categories to enhance recycling accuracy and efficiency. GreenSort helps residents/tourists responsibly dispose of waste to reduce their carbon footprint before leaving a city or vacation spot.

Technologies: android studio, Firebase, TensorFlow

https://wszfln.github.io/

Simple-Video-Net

Not presenting

Academic Title

Live Streaming Media Server Based on Real Time Streaming Protocol

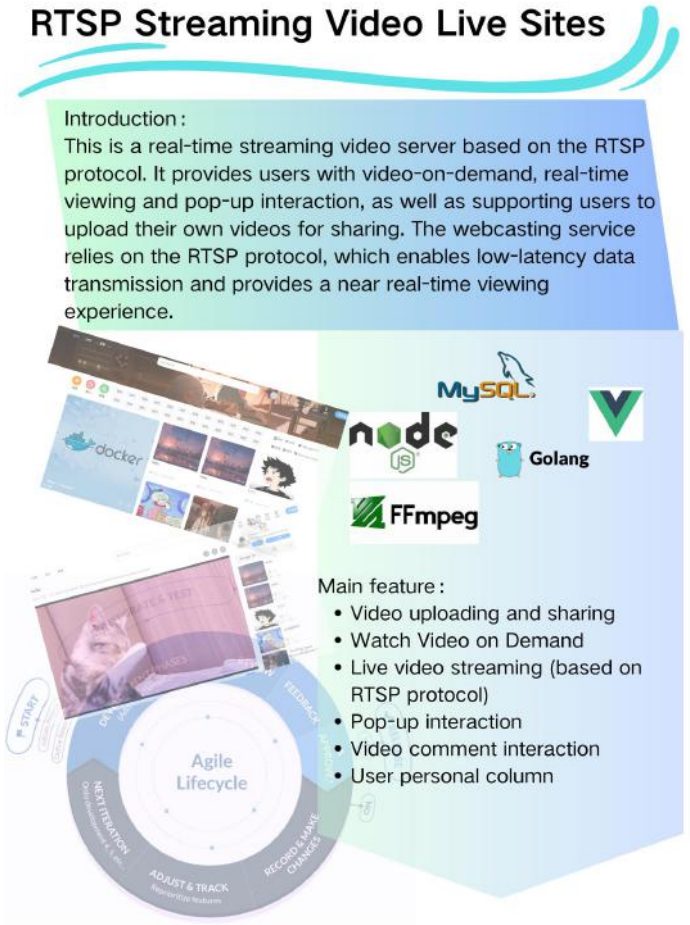
by Mingju Sun

Project Areas

- Media Development and Production
- Software Development: (Back End / Front End)

Project Supervisor

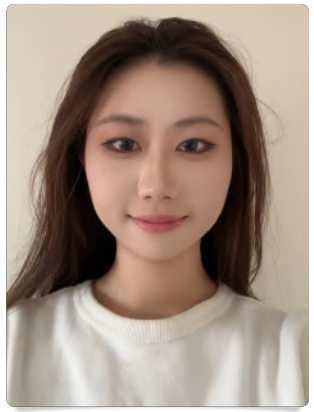
Rahul Mhapsekar



This is a live streaming video server based on the RTSP protocol. It provides users with two main segments: video on demand and real-time live viewing. After logging in, users can favourite videos, post comments, interact with pop-ups and upload their own videos to share with others. At the same time, the site also provides column services, users can share content and interact with others, social. The live broadcast function is based on RTSP protocol, which has the advantages of low latency, cross-platform compatibility and easy expansion.

Technologies: Vue, FFmpeg, MySQL, Node.js, Golang

https://sunmingju.github.io/FYP-pages/



CineSlot: Your Ticketing Guide

Not presenting

Academic Title

A User-centered Online Movie Ticketing System

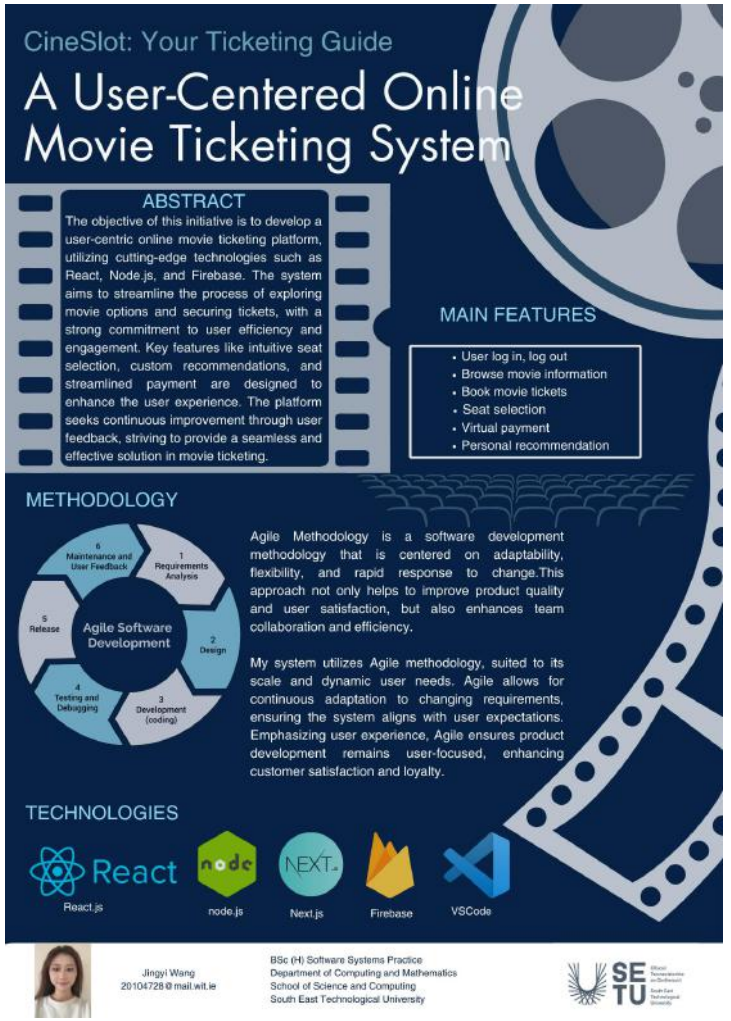
by Jingyi Wang

Project Areas

- Software Development: (Back End / Front End / Web)

Project Supervisor

Opeyemi Bamigbade



This project develops a user-centric online movie ticketing platform, leveraging React.js, Node.js, Next.js and Firebase for seamless browsing and booking. By enriching the browsing and booking process, this system enables users to seamlessly browse movie listings and book tickets. All of these features are designed with a focus on usability, efficiency, and user engagement with features such as seat selection, personalized recommendations, and virtual payment. Through optimization based on user feedback, the project aims to be a practical and user-friendly ticketing solution.

Technologies: React, Node.js, Next.js, Firebase

https://wang-jingyi09.github.io/

LitConnect: Tailored Reading & Community

Not presenting

Academic Title

Intelligent Book Sharing and Communicating System That Includes Recommendations and Grouping

by Jia Yang

Project Areas

- Artificial Intelligence
- Information Systems and Modelling
- Software Development: (Back End / Front End / Web)

Project Supervisor
Jacqui Woods O'Brien

LitConnect is an innovative platform designed to enhance the reading experience by connecting readers through personalized book recommendations and interactive community features, allowing authors to upload selections and chapters of their books, match them with more appropriated book reviews, find book lovers of similar interests, and interact with them in real time. The platform also features algorithmic recommendations that can push books they are interested in, while everyone can customize their own personal interface, so that avid readers can engage with a like-minded community.

Technologies: JavaScript, React, Node.js, MySQL

https://github.com/Yolanda2002/FYP_LitConnect

A Place for Emotion Companion

Not presenting

Academic Title

Comfort Talker

Project Areas

- Software Development: (Back End / Core / Front End)

Project Supervisor
Michael McMahon

by Yuanzhe Yang

'Comfort Talker', as an innovative, secure, and user-friendly online platform is dedicated to providing emotional support and fostering companionship. Utilizing cutting-edge technologies such as React for an engaging frontend experience, and Node.js with Express for a robust backend, coupled with WebSocket for seamless real-time communication, the platform ensures a dynamic user experience. This project provides interactive chatrooms, where users can connect with friends and classmates to share experiences and support each other, and empathetic chatbots for personalized, private emotional guidance

Technologies: Vue, Express, Websocket

https://github.com/20104796/fyp.git

Globetrot Guru

Not presenting

Academic Title

A Web Application Based on Spring Boot for Tourists Who Want to Travel

by Sirui Yao

Project Areas

- Software Development: (Back End / Front End / Web)

Project Supervisor

Jacqui Woods O'Brien

This web application can provide people with descriptions and basic information about different attractions, hotels around the attractions, and people can view pictures and prices. After a trip, people can also post honest reviews of attractions to provide suggestions for people who want to visit in the future. The application protects users' privacy to the fullest extent possible, and in the event of a review violation, the administrator will immediately delete the review. In this application, the two key roles are the user and the administrator, the user needs to log in to view the relevant information and publish their own comment, the administrator can be in the background of the attraction information, hotel information, user evaluation to add, delete, change and check the operation.

Technologies: JAVA, JQuery, Springboot, MYSQL

https://sirui125.github.io/

MedGraphQA

Not presenting

Academic Title

Medical Question Answering System Based on Knowledge Graph

by Yiming Yu

Project Areas

- Artificial Intelligence
- DevOps
- Media Development and Production
- Software Development: (Core / Mobile Native)

Project Supervisor
Michael McMahon

For ordinary people, going to the hospital for medical treatment is an option, but for international students who are not familiar with the local area, medical question and answer robots will provide a great with help, the medical Q&A robot can provide advice on maintaining health, including information on diet, exercise, vaccinations, etc., to help international students better maintain their health in a foreign country. TSo, I plan to build a medical question-and-answer robot to solve these problems and help people understand their physical conditions more conveniently.

Technologies: neo4j, react

https://github.com/yym9420/final-year-project.git

Spiral: The Dynamic Rhythm Game

Not presenting

Academic Title

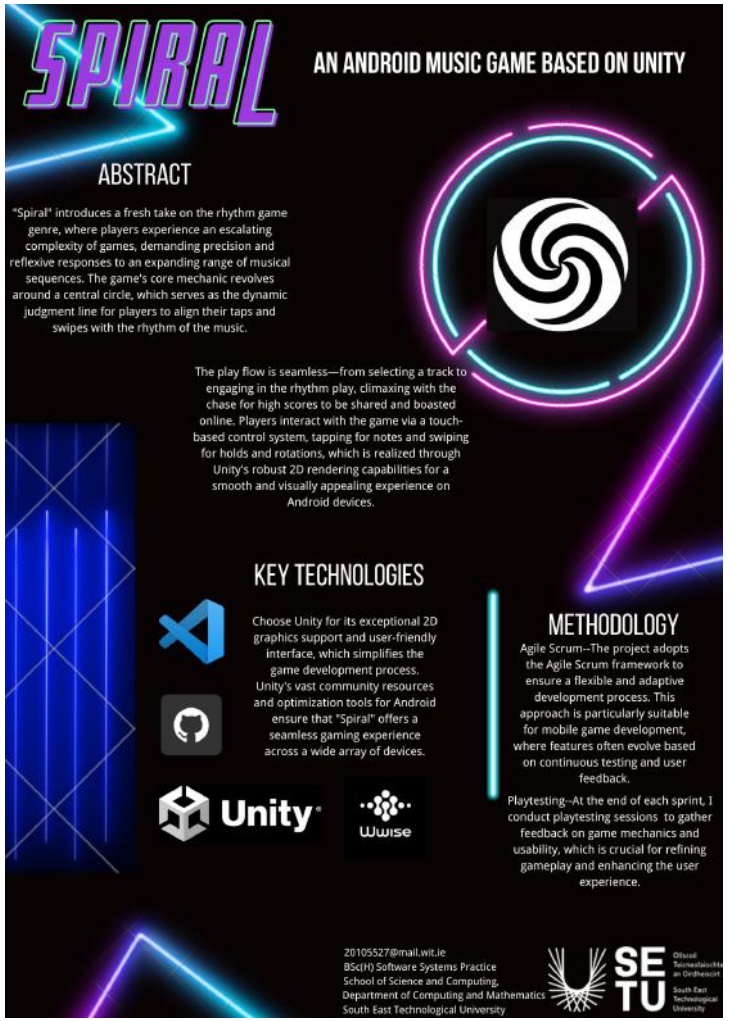
Spiral: An Android Rhythm Game Based on Unity

by Shaobo Zang

Project Areas

- Digital Graphic Design
- Game Development
- Software Development: (Mobile Native)

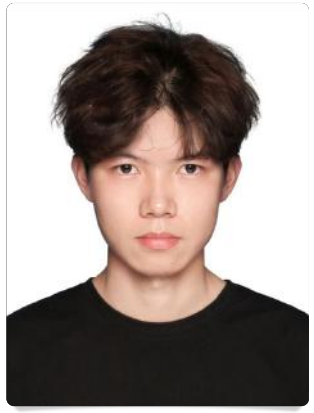
Project Supervisor
Richie Lyng



“Spiral” is a rhythm game for Android that pushes the boundaries of rhythm game by introducing a dynamic, rotating judgment line in the form of a circle, diverging from the traditional static line used in other games. This innovative mechanic necessitates a blend of timely taps in sync with the rhythm and strategic manipulation of the circle’s rotation to hit the notes accurately. With its interactive note types that demand precision and its custom chart creation feature, “Spiral” allows players to express their musicality and challenge their dexterity. Moreover, the game includes a competitive online leaderboard that motivates players to perfect their skills and rise through the ranks. “Spiral” provides an engaging platform for rhythm game enthusiasts.

Technologies: Unity Engine, Android Studio, C#

https://sbzng.github.io/landingPage/



Emerald-ParcelHub: Delivery Redefined

Not presenting

Academic Title

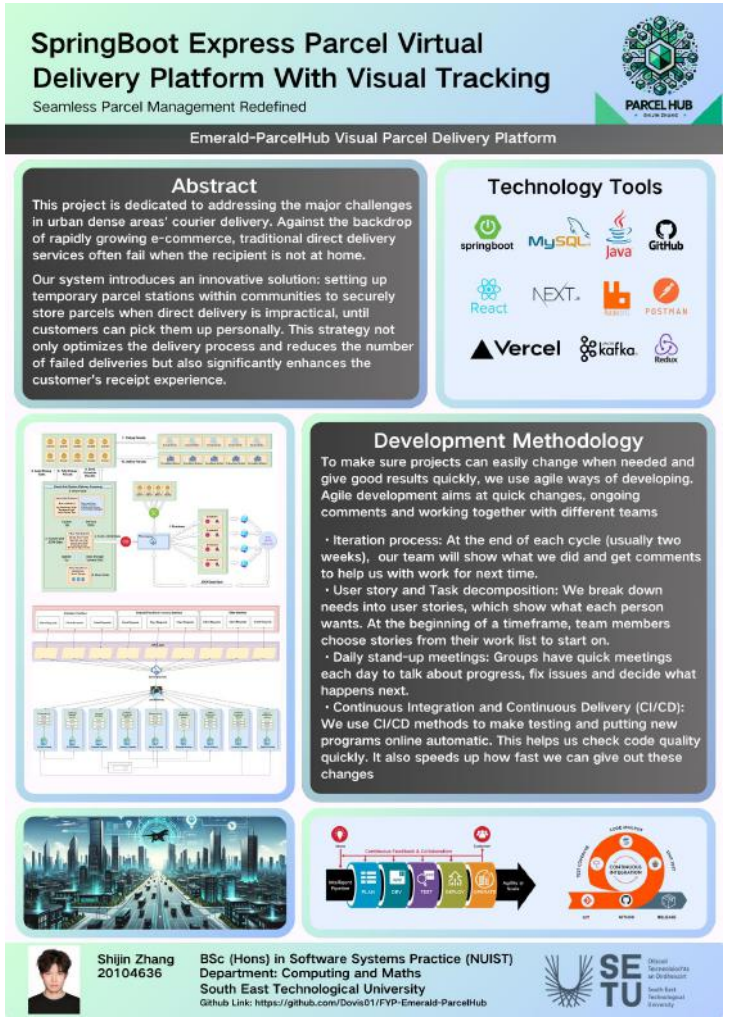
Spring Boot Express Parcel Virtual Delivery Platform with Visual Tracking

by Shijin Zhang

Project Areas

- Database and Analytics
- DevOps
- Information Systems and Modelling
- Personal Independent Project
- Software Development: (Back End / Core / Front End / Web)

Project Supervisor
Richard Lacey



This project is dedicated to addressing the major challenges in urban areas' courier delivery. Against the backdrop of rapidly growing e-commerce, traditional direct delivery services may fail when the recipient is not at home. Our system introduces an innovative solution: setting up temporary parcel stations in communities to securely store parcels when direct delivery is impractical, until customers can pick them up personally. This strategy not only optimizes the delivery process and reduces the number of failed deliveries but also significantly enhances the customer's receipt experience.

Technologies: Next.js, React, Java, Vercel, MySQL, Node.js, RabbitMQ, SpringBoot, Redux, Firebase

https://dovis01.github.io/

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South East Technological University

SECTION 2
HIGHER DIPLOMA IN SCIENCE — HDIP

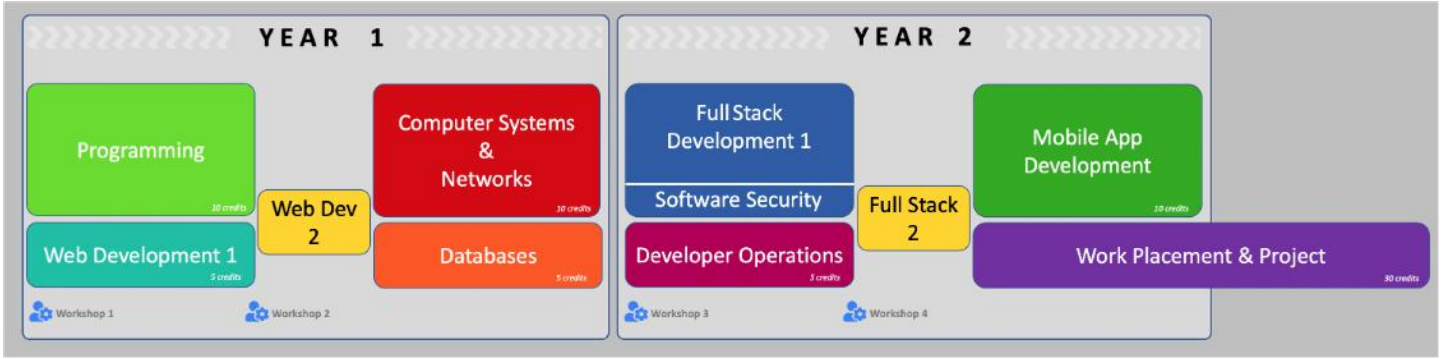
PROJECT BROCHURE

SPONSORED BY

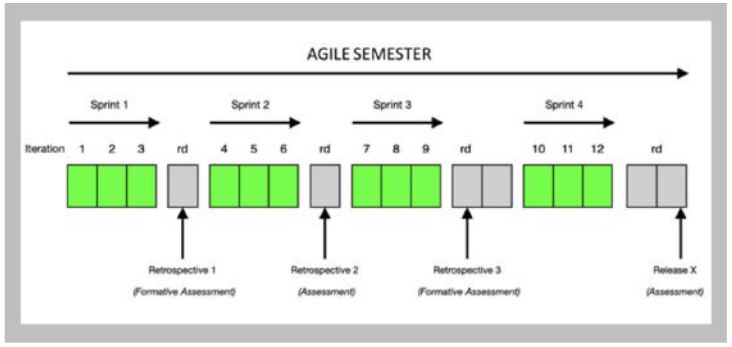
KARGO

Higher Diploma in Science in Computer Science (Online)

The ONLINE **Higher Diploma in Science in Computer Science** is an accelerated 24-month ICT Conversion Course focused on full stack oriented development. It is designed to allow honours graduates from non-computing disciplines to acquire the industry-relevant ICT and software development skills, expertise and practical experience required to become suitable candidates for employment in the ICT domain in general and in software development in particular.



As an accelerated course, there is an average time commitment of 16 hours per week required. Students with less ICT experience may need to factor in more time. The course is delivered using our award-winning online delivery platform—TutorStack. Pioneered on this programme with industry, we follow an "Agile Semester" approach, typically consisting of 4, three-week sprints followed by 1-week breaks for retrospective, after each sprint.

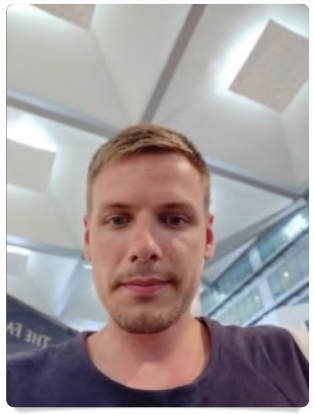


In addition there is a six lesson on-demand module each summer. Online delivery over the two years is supplemented by four onsite workshops to further enhance and deepen the learning experience, and learning community. Although not mandatory, these should be deemed essential. While all taught modules are delivered within two years, Work Project & Placement runs into the following year so as not to over burden students.

For a more in depth preview of the course content and structure, please watch this video.

Try out a sample of the course here.

Find out more here.



Food Log

Not presenting

Academic Title

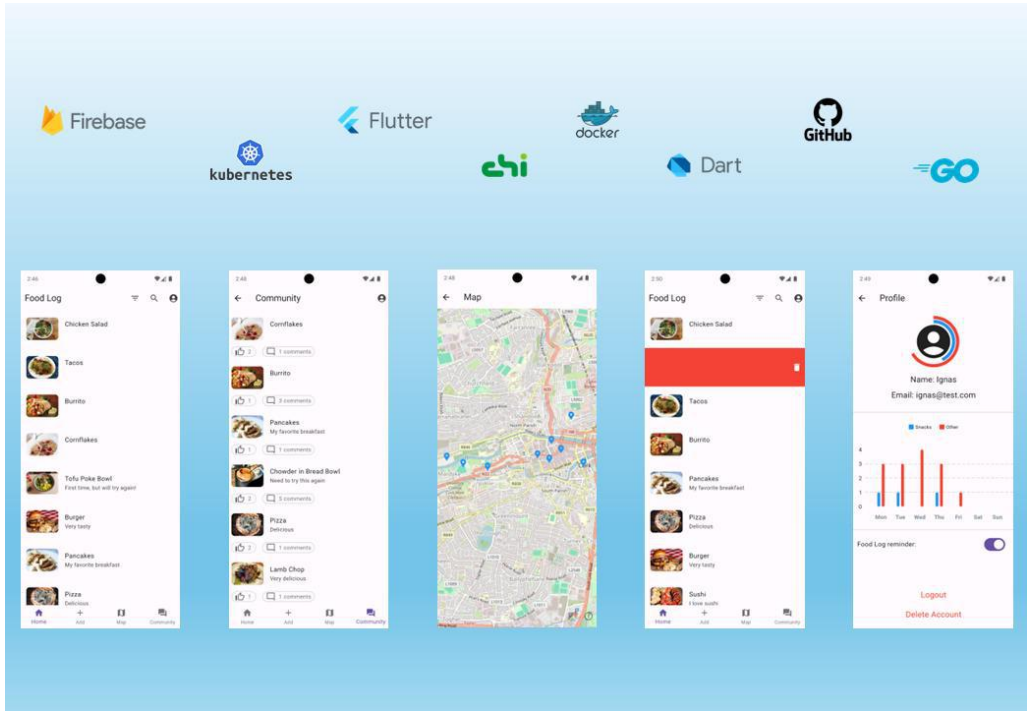
Hybrid App for Monitoring Food Intake

by Ignas Baranauskas

Project Areas

- Open Source
- Personal Independent Project
- Software Development: (Back End / Mobile Hybrid)

Project Supervisor
Richie Lyng



FoodLog, a food tracker application designed specifically for those who prefer simplicity and convenience. This application is perfect for individuals who want to take control of their eating habits without the hassle of manually tracking calories. It allows individuals to monitor their food intake, it's not just about logging meals, it's about making informed choices that align with your health and wellness goals. With FoodLog, you can maintain a comprehensive record of all your daily consumptions. This allows you to gain insights into your eating patterns, helping you make healthier choices.

Technologies: Flutter, Golang, Chi framework, Firebase, Docker

https://bit.ly/3UKCzxw

Task Management Web App

Not presenting

Academic Title

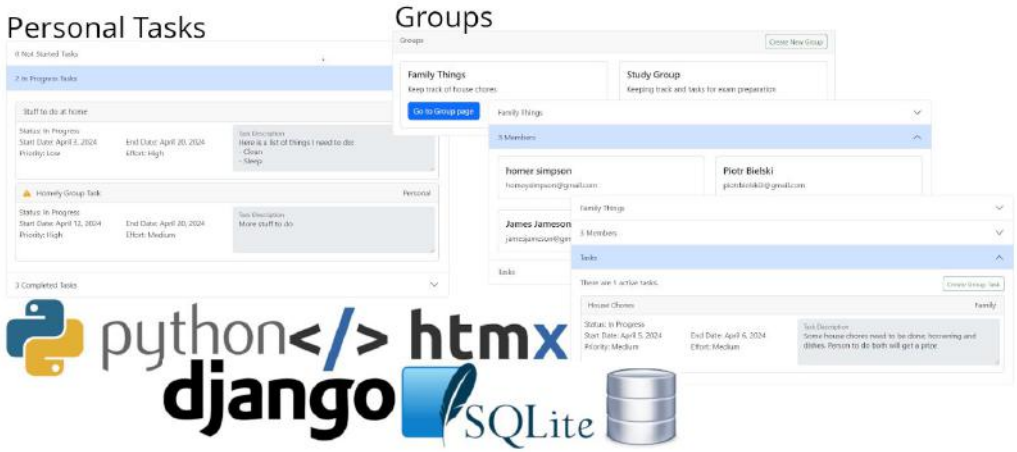
Server-rendered Web App with Hateoas

by Piotr Bielski

Project Areas

- Open Source
- Personal Independent Project
- Software Development: (Back End / Web)

Project Supervisor
Dave Hearne



Task Manager is a web application without a frontend framework and fully relies on server-side rendering using Hypermedia as the engine of application state (HATEOAS). It's features include the ability for users to create custom templates for tasks, groups, and group tasks. The tasks can have various fields enabled or disabled depending on their template, and can be organized using labels such as assignments, lectures, or personal things. As for the groups, these support group tasks that are accessible to anyone in the group, but not visible to anyone else.

Technologies: Python, Django, HTMX, SQLite, Bootstrap

https://circleorange.github.io/

Submissions

#57 / TL238

Academic Title

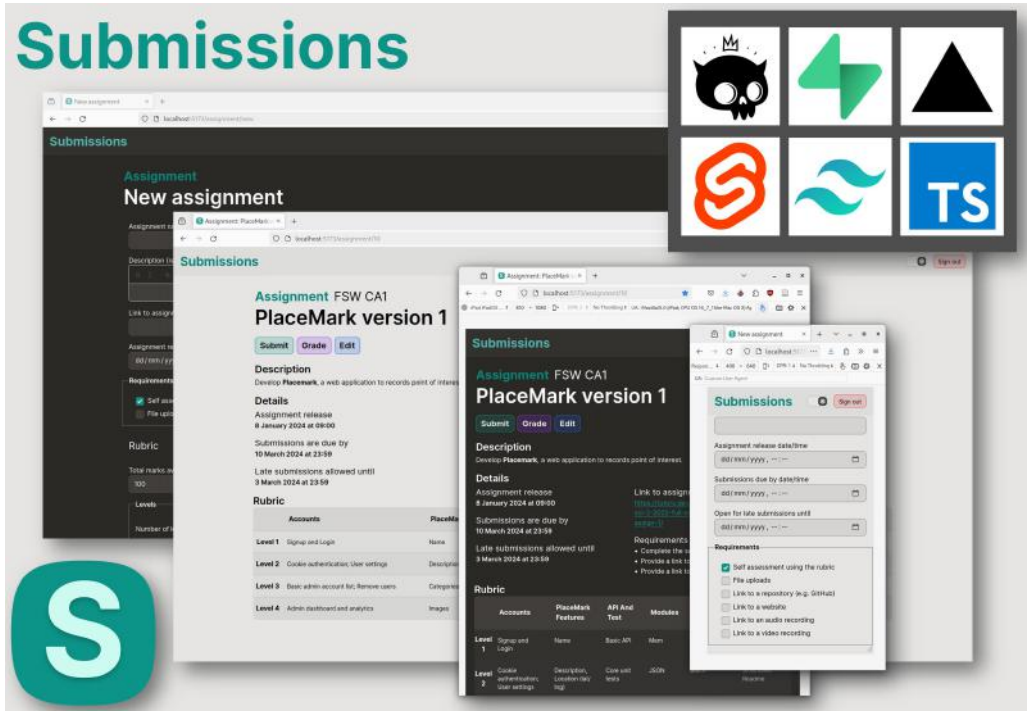
A Full Stack Web Application for Assignment Submission and Grading

by Ian Blake

Project Areas

- Open Source
- Personal Independent Project
- Software Development: (Back End / Front End / Web)

Project Supervisor
Catherine Fitzpatrick



Submissions is a full stack web application for assignment submission and grading, inspired by the Tutors Open Source Project.
Educators can set up assignments with assessment information, rubrics, marking schemes and due dates. Students complete their assignments online with file uploads, form completion, and links to external resources. Educators can then mark these assignments, providing grades and feedback for the students to view.
Submissions is designed to work alongside the Tutors Open Source Project or any other learning environment, whether online or classroom-based.

Technologies: Skeleton, Supabase, SvelteKit, Tailwind, TypeScript

https://ianbl8.github.io/submissions/

GrubShare: One App, Many Tastes

Not presenting

Academic Title

GrubShare: An Application to Share Recipes and Meal Ideas

by Daniel Coffey

Project Areas

- Database and Analytics
- Personal Independent Project

Project Supervisor
Mary Lyng

Daniel Coffey
08559350

GrubShare:

One app, many tastes

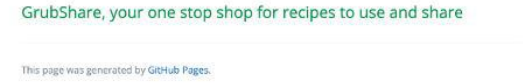
Mobile App

https://dannydecaf.github.io/

The aim of Grubshare, is to establish a community of chefs of all experience levels. Whether they are professional, or just have a passing interest, Grubshare brings these people and their recipes together. Whether the user wants to find a recipe containing a certain ingredient or a recipe of a certain category/type of cuisine, or if the user simply wishes to post their own recipe for others to enjoy and compliment, Grubshare is the only app you will need.
I have chosen React Native as the main framework of the app. JavaScript the language which I intend to use.

Technologies: React Native, JavaScript, Firebase

https://dannydecaf.github.io/



React BIM File Console

Not presenting

Academic Title

BIM File Console: React Platform Console to View and Interact with Files in a BIM Model

by Darragh Conneely

Project Areas

- Database and Analytics
- Information Systems and Modelling
- Work Based Project
- Software Development: (Front End / Web)

Project Supervisor
Sonya Hogan

As a work-based project as part of a larger system, this project aims to design a user-friendly, front-end console for viewing, interacting with, and querying files in a Building Information Model (BIM) in one centralised location in the form of a web app page. As part of a larger app and system, this project builds on existing data models, internal platform services, and front-end design conventions using front-end technologies like React, and JavaScript, and platform technologies, such as front-end, back-end, and API services.

Technologies: JavaScript, React, MongoDB, internal platform services

https://darragh-c.github.io

Ensemble

Not presenting

Academic Title

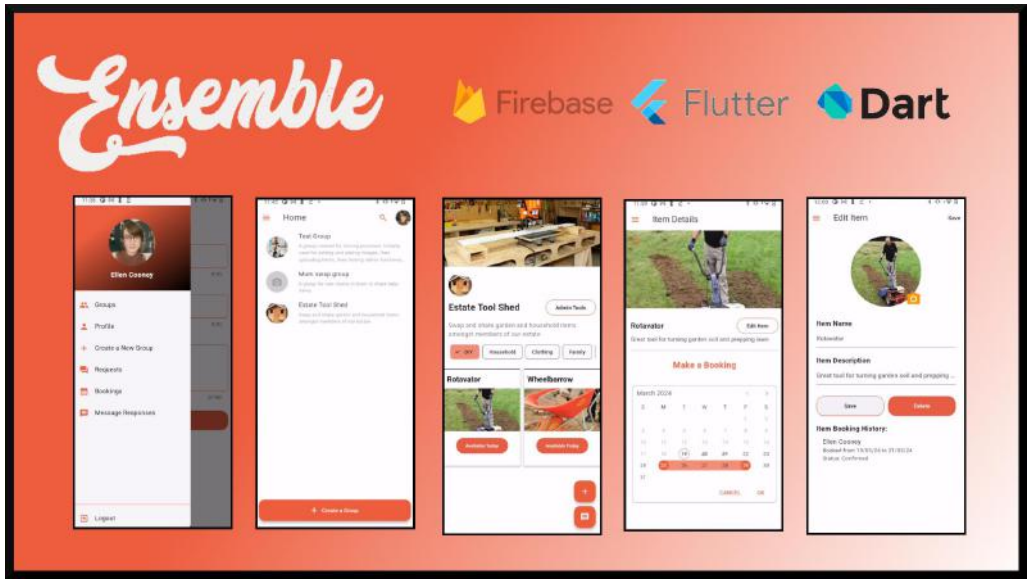
A Multi-platform Catalogue Application for Community Sharing

by Ellen Cooney

Project Areas

- Personal Independent Project
- Software Development: (Mobile Hybrid)

Project Supervisor
Richie Lyng



Ensemble is a cross platform application built using Flutter and Firebase as the backend for authentication, database, and storage. The app provides a space for communities to share resources such as tools, kitchen equipment, clothing etc with an aim to cutting down on waste, clutter and unnecessary spending.
Users can create, join and run groups where members add items to a catalogue to be viewed by other members, who can see the availability and send a request to borrow the item for a specific date range.

Technologies: Flutter, Dart, Firebase

https://ensemble2024.glitch.me/

XMDM

Not presenting

Academic Title

XMDM - Web Application for Managing Parameters in Other Applications

by David Cotter

Project Areas

- Work Based Project

Project Supervisor

Deirdre O'Halloran

XMDM is a java web application that's used to store data which provides business & development team an easier way to modify parameters in other applications. Teams set parameters to XMDM & the data platform applications, reads it, and adapts their behavior. The aim of my application is to create a REST API application using Scala with the play framework that can be used to eventually replace the java backend of the old application. Users can login to call the routes to retrieve data, input, update and delete data as necessary

Technologies: Scala, Play Framework, PostgreSQL, Docker, REST API

http://bit.ly/49fyVjY

EVCarHireIreland.ie

#58 / TL238

Academic Title

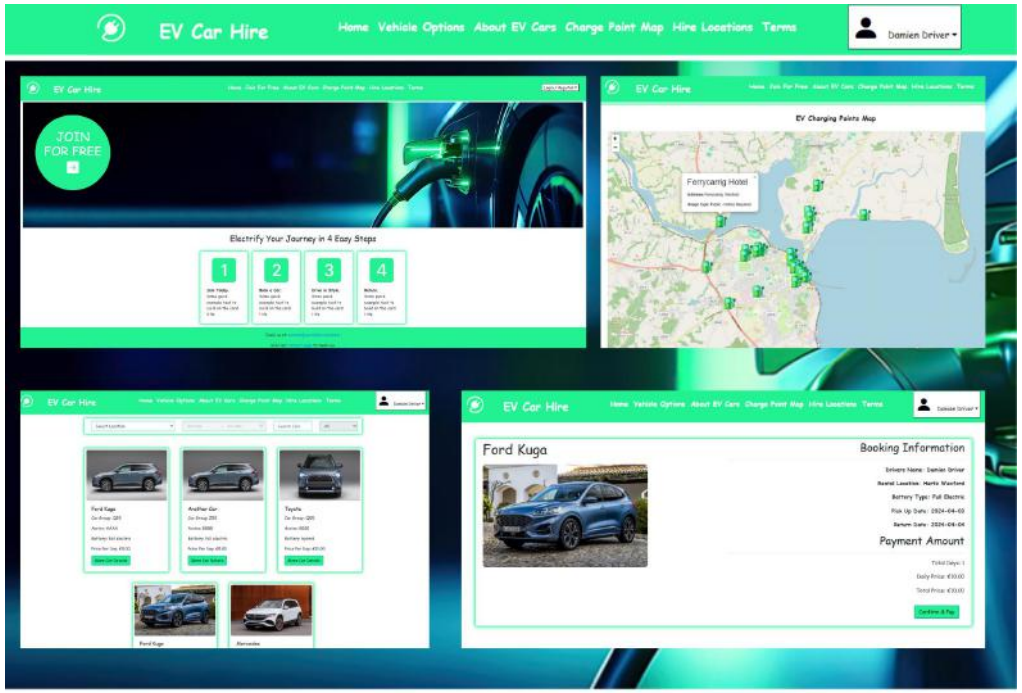
EV Car Hire Reservation Web Application

by Damien Driver

Project Areas

- Work Based Project
- Software Development: (Web)

Project Supervisor
TJ McDonald



EV Car Hire is a user-friendly web application to allow users book electric vehicle rentals. The React frontend invites users to sign up, browse the available fleet and easily filter by dates and locations. The platform simplifies the process of booking an eco-friendly ride with an integrated stripe payment facility. The backend of the application is built using Node and Express with data stored in MongoDB. An API from openchargemap provides information on the nearest available charge points for user convenience.

Technologies: Node.js, React.js, Express.js, MongoDB, Vercel

https://damiendriver.github.io/evcarhireireland/

Kraken

#59 / TL238

Academic Title

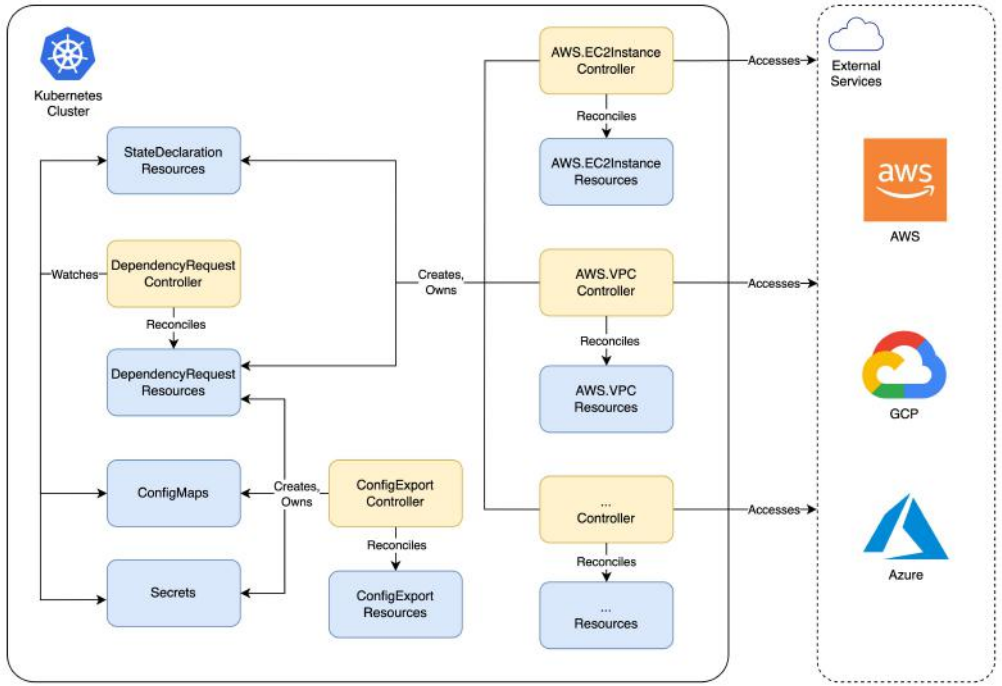
Infrastructure as Code for Kubernetes

by Eoin Fennessy

Project Areas

- CI/CD & Testing
- Cloud Computing
- DevOps
- Personal Independent Project

Project Supervisor
John Rellis



An IaC tool for Kubernetes that provides declarative APIs for provisioning and managing cloud infrastructure from multiple cloud providers. Each infrastructure resource's state can be referenced by other dependent resources and used to dynamically generate/update their configurations. It offers K8s cluster integrations such as state export/import to/from ConfigMaps and Secrets. Infrastructure configs can be versioned and managed using existing GitOps systems for K8s such as ArgoCD. Kraken is modular and extensible, and additional providers can be developed by implementing a standard spec.

Technologies: Go, Kubernetes, AWS, Kubebuilder, Docker

http://kraken-iac.eoinfennessy.com

All Weight is Beautiful

#60 / TL238

Academic Title

Interactive Art Generator Using a Digital Weighing Scale API

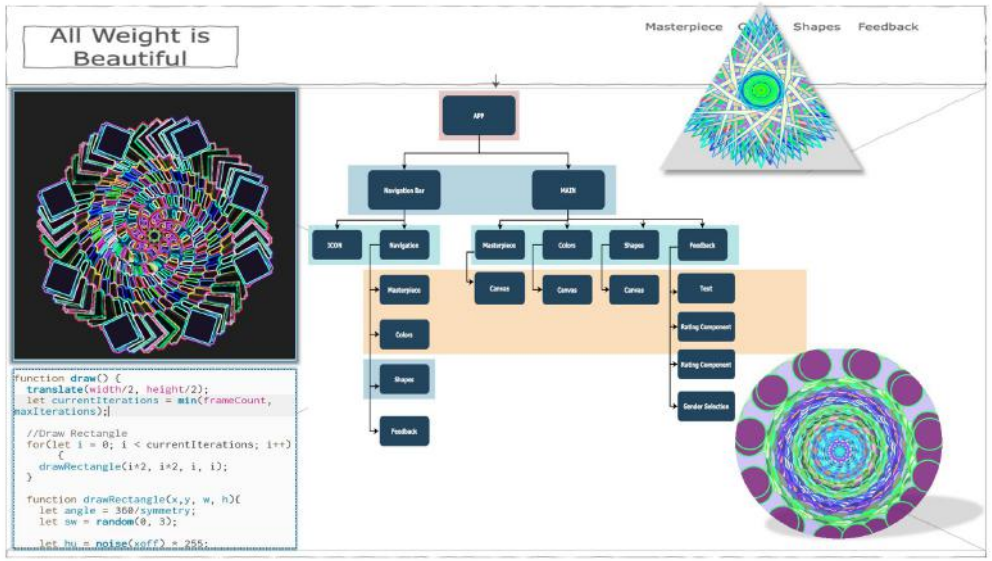
by Isadora Fitzgerald

Project Areas

- Animation
- Digital Graphic Design
- Internet of Things
- Open Source
- Personal Independent Project
- Software Development: (Web)

Project Supervisor

Sinead O'Riordan



"All weight is beautiful" illustrates the fusion of Art and Computer Science in a quirky and unique Art Gallery web app prototype of a larger interactive public art installation. An anonymous user simply steps on a weighing scale allowing the scales API to gather a dataset from the users interaction with the scales. Using this extracted dataset, P5.js is integrated into a React component of the web app gallery and outputs a visualisation via random numbers and patterns emulating Kaleidoscope type imagery - a multi-faceted, symmetrical, colourful image based on a shape.

Technologies: Weighing scale, Scales API, Dataset, Json, P5.js, React components, Shapes, Web app gallery, Random

https://github.com/fitzdora/reactAwib_pa.git

Markify

Not presenting

Academic Title

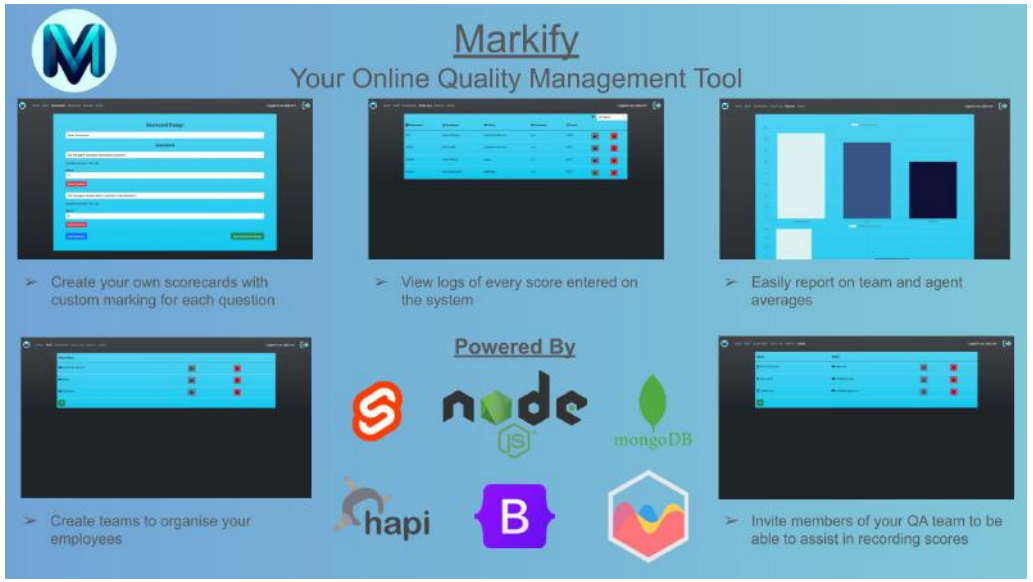
A Web App for Managing Quality in Contact Centers

by Adam Gibson

Project Areas

- Software Development: (Web)

Project Supervisor
Dave Hearne



Quality management is an important process for organizations to have as it provides a structured framework to ensure that an organization is continuously providing a product or service that is top-tier and meets its client's expectations.
Markify aims to resolve some common issues around quality management by providing an online tool which organisations can use to map out their team structure, as well as create custom scorecards to evaluate the interactions of their agents and provide reports at a glance so that organisations can understand the quality they are delivering.

Technologies: Sveltekit, NodeJS, MongoDB, ChartsJS, JOI, Mongoose, BCrypt, Hapi, API, Bootstrap

https://sites.google.com/view/markify-project-page/home

3D Interactive Timeline

#61 / TL238

Academic Title

Interactive Timeline-using 3D Elements to Create an Interactive Timeline

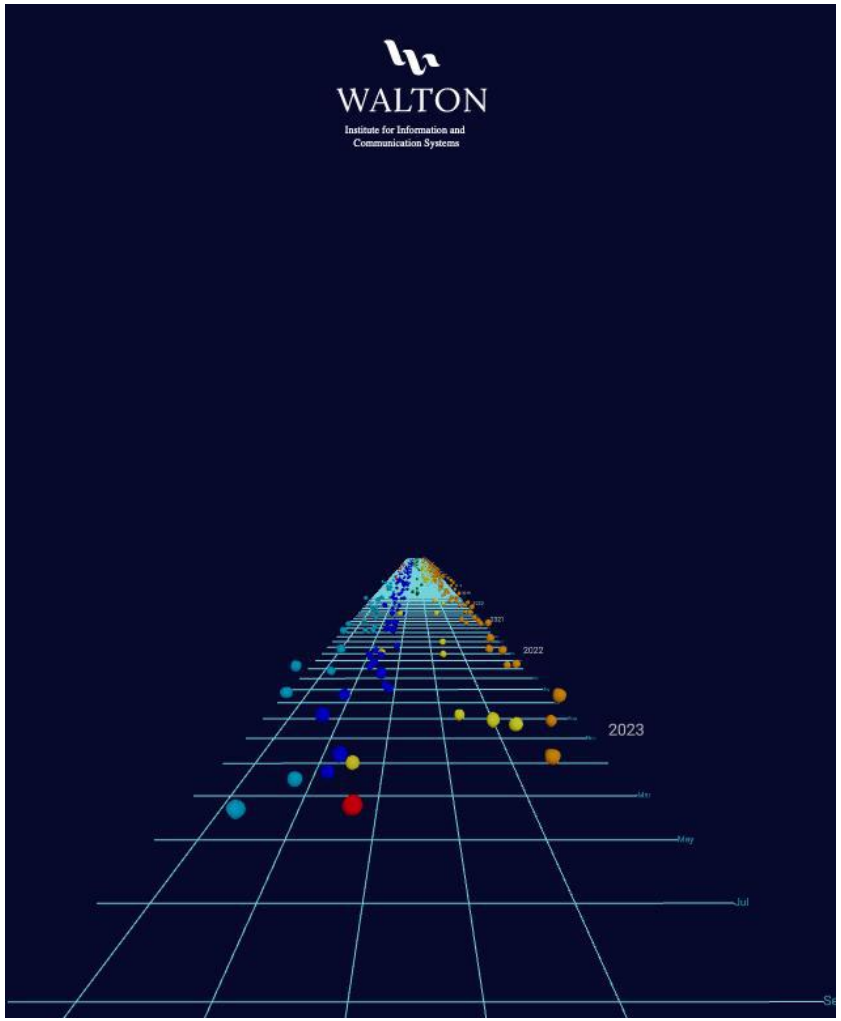
by Renato Goedert

Project Areas

- Animation
- CI/CD & Testing
- Database and Analytics
- DevOps
- Work Based Project
- Software Development: (Front End / Web)

Project Supervisor

Mary Fitzgerald



This Project revolves around a dynamic Web application featuring a 3D timeline alongside the implementation and management of all infrastructure to host this application
The project was divided in front-end, back-end and infrastructure. For the front end Next.js was the framework with React 3D libraries. Strapi, and headless CMS, was used as back-end. As infrastructure, Docker was used for container images containing GitLAB CI/CD technologies and Traefik to manage all networking as a reverse-proxy. Terraform was employed to generate infrastructure as code.

Technologies: React, 3D WebApp, Timeline, Full-Stack, Next.js, Typescript,

https://fabulous-splashy-riddle.glitch.me/

SpareRoom

Not presenting

Academic Title

‘SpareRoom’ - A Student Accommodation Web Application

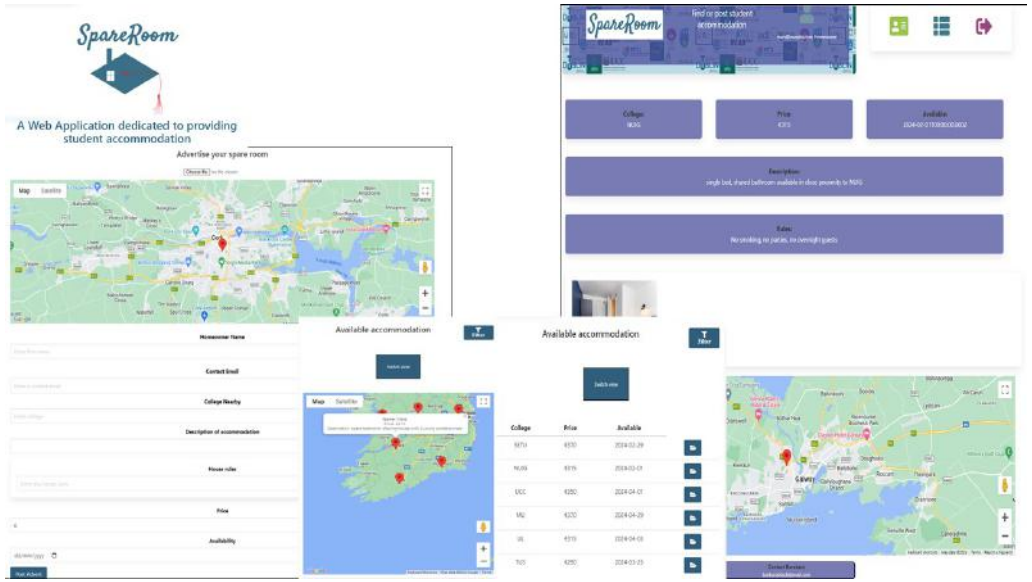
by Mairead Holton

Project Areas

- Software Development: (Web)

Project Supervisor

Mary Fitzgerald



I have developed a web application dedicated to student accommodation. Homeowners can post adverts for available accommodation and students can search through adverts to find accommodation that suits their needs. The web application employs a Hapi back-end to create a REST API which interacts with a svelte front-end component. User input is stored in a Mongo database and the web application is hosted on Netlify. The motivation for this project is due to the current housing crisis which is having a huge impact on students.

Technologies: Hapi, Svelte, MongoDB, Netlify, JWT, Javascript

https://spareroomlandingpage.netlify.app

Dart

Not presenting

Academic Title

Automated Document Regression Testing Tool

by Matthew Hornby

Project Areas

- CI/CD & Testing
- Work Based Project
- Software Development: (Back End / Mobile Hybrid)

Project Supervisor
Catherine Fitzpatrick

DART (Document Automated Regression Testing) is a work based project that provides for a web application that allows users to interact with a document service. The document service relies upon a proprietary low code tool for crafting documents and forms with variability rules. Users of the application can do things like: - Assemble documents - Compare assembled documents - Add unit tests to documents - See document generation statistics and reports - Link Jira tickets to document code changes

Technologies: React, Node, Python, Kotlin

https://dart-landing-page.onrender.com

Festi-Friend

Not presenting

Academic Title

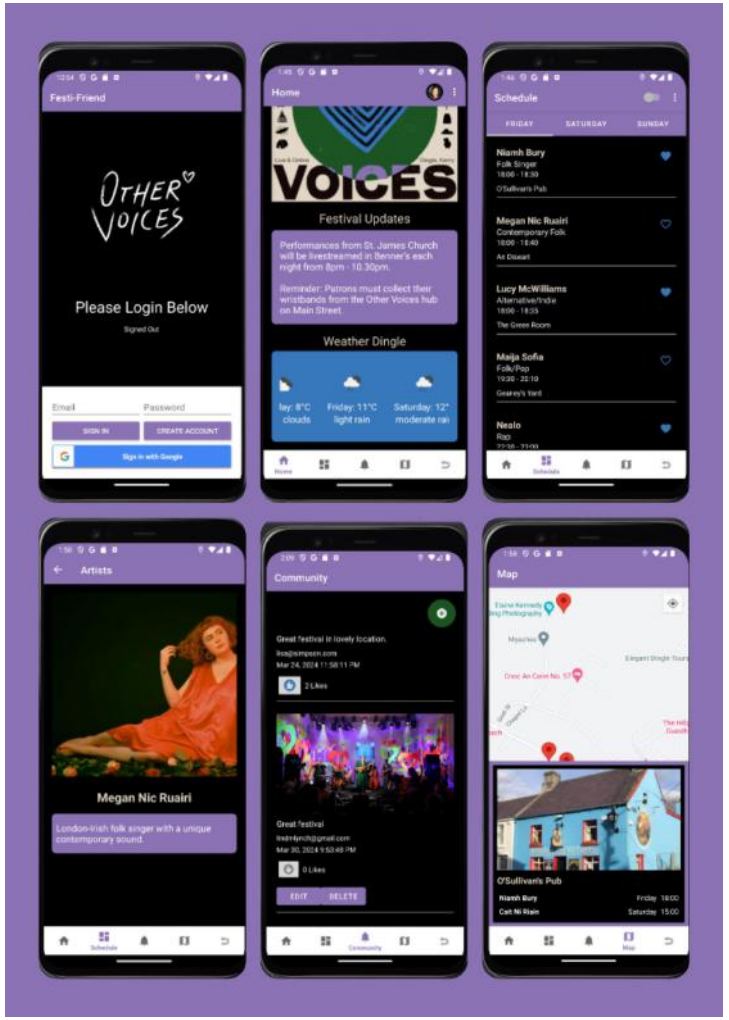
The Ultimate Mobile Festival Companion

by Linda Lynch

Project Areas

- Personal Independent Project
- Software Development: (Mobile Native)

Project Supervisor
Mary Lyng



Festi-Friend is a native Android app that acts as an essential festival guide. It simplifies event planning and attendance for users. Key features include: • Google Sign-in. • Realtime updates. • Three-day forecast for the festival location. • Comprehensive event schedule that allows users to curate their own personal timetable. • A brief bio of each artist performing at the festival. • Community section where users can upload images, review the festival, and engage with posts. • Festival Map showing the user's live location, plus venue markers that display venue info and performance times.

Technologies: Firebase, Kotlin

https://bit.ly/3OFLtsk

LearnLocal

Not presenting

by Rodrigo Machado da Silva

Academic Title

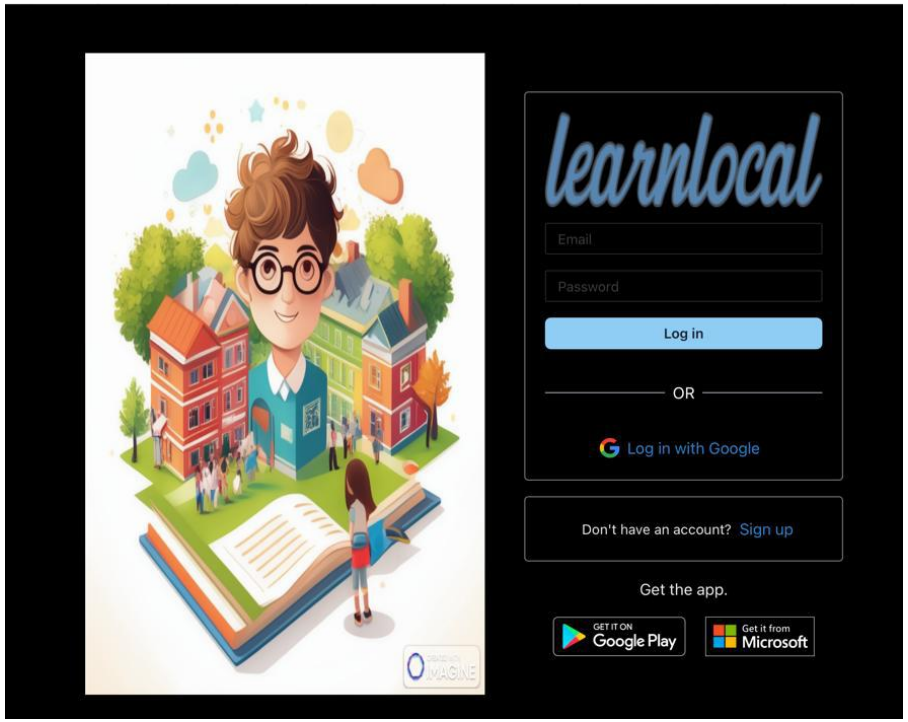
LearnLocal

Project Areas

- Software Development: (Back End / Front End)

Project Supervisor

Ruth Barry



People are eager to learn, but finding local experts or accessing community-driven knowledge becomes extremely difficult. LearnLocal proposes a solution where community members can showcase and share their skills. This concept extends beyond traditional learning platforms, emphasizing a community-centric approach. By creating a space for local skill- sharing, LearnLocal aims to encourage a sense of togetherness and make the most of the abundant expertise within a community. Join LearnLocal and help making it a place where everyone feels connected, engaged, and excited to learn together and build stronger local communities.

Technologies: React, Chakra, Firebase, Zustand

https://rodmacbr.github.io/learnlocalwebsite/

Neo ChatBot

Not presenting

Academic Title

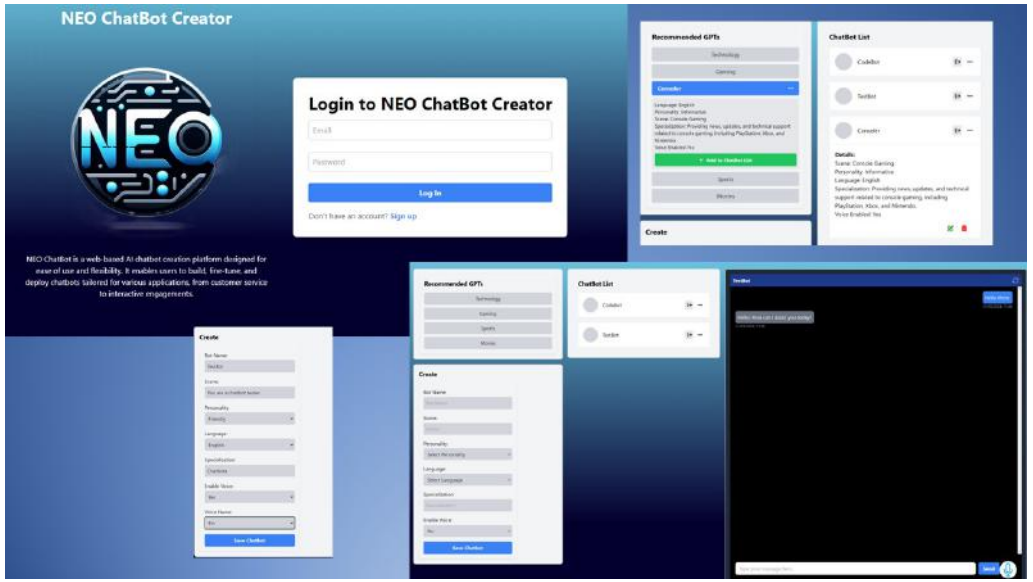
Neo ChatBot Creator Web App

by Eugenio Manlapaz

Project Areas

- Artificial Intelligence
- Software Development: (Back End / Front End / Web)

Project Supervisor
John Rellis



Neo Chatbot is a web app designed for creating and customizing chatbots that can be used in different use cases. The app allows for multiple chatbots with different customization options such as speciality, language and personalities. The user can interact with the chatbot using text and voice inputs. The AI language model used in this web app is OpenAIs 3.5 Turbo which can be further upgraded in the future. The voice functionality of the web app is made possible by ElevenLabs which offfers a massive range of voice options.

Technologies: React, Typescript, Javascript, Tailwind CSS, FastAPI Python, Firebase, OpenAi, Eleven-Labs

https://emanlapaz.github.io/NeoLandingPage/

FocusSphere

Not presenting

Academic Title

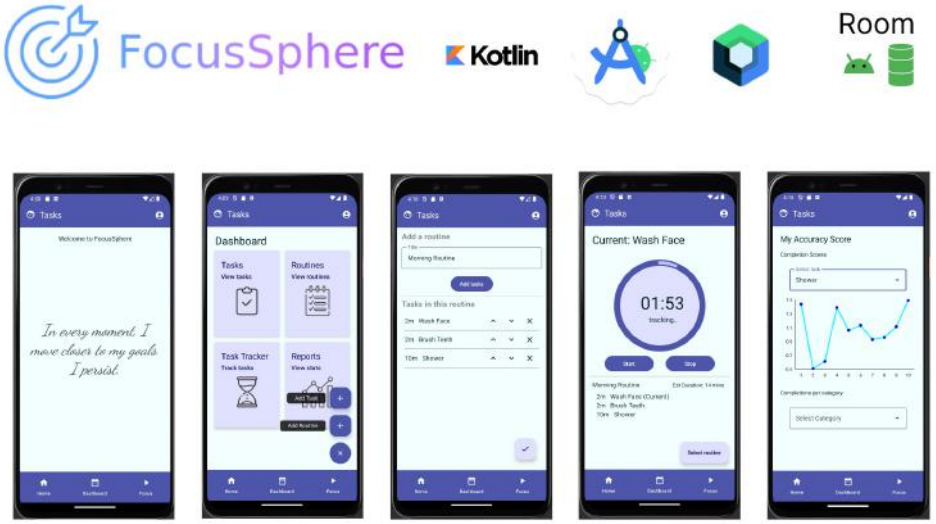
Android Native Application for the Management of Common ADHD Challenges

by Carol Marjara

Project Areas

- Personal Independent Project
- Software Development: (Mobile Native)

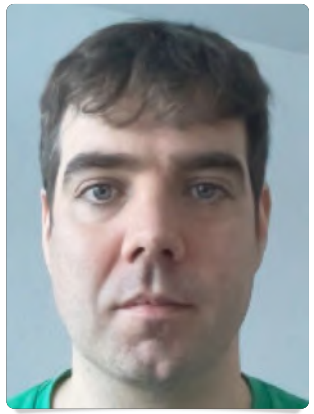
Project Supervisor
Mary Lyng



FocusSphere is an Android compose application developed in Kotlin programming language.
It is designed to enhance the focus and productivity of users with ADHD based on INCU motivating factors (Dodson) and aims to mitigate adverse effects of challenges faced by individuals with this neurodivergent condition e.g. executive dysfunction, time management and distractibility.
The application features an easy-to-navigate UI, task and routine lists with CRUD functionality, and a task scheduler which tracks task completion times and generates useful user insights and reports.

Technologies: Android, Kotlin, SQLite, Room, Jetpack Compose

https://linktr.ee/carolmarjara



My Feedback Form

Not presenting

Academic Title

A Web App Used to Create and Deploy Online Surveys

by Gregory Mc Carthy

Project Areas

Project Supervisor
Catherine Fitzpatrick

My project is called MyFeedbackForm. It's a web app used to create, deploy and analyse online surveys. These surveys are web forms used for collecting data for the purpose of market research, customer feedback or any data collection that can be done using a web form. Users of the app will be able to create online questionnaires and invite people to submit responses via a web form.
The backend will be built with Python and FastAPI and PostgreSQL. The frontend will be built with Typescript and React.

Technologies: Typestripe, React, Python FastAPI, PostgreSQL

https://bit.ly/3SB5bXp

SeaSplash

Not presenting

Academic Title

Mobile App Promoting Safe Swim Locations for Swimmers

by John Mc Donald

Project Areas

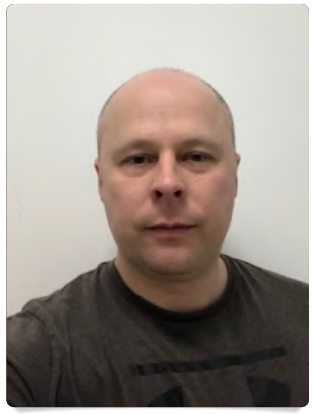
- Personal Independent Project
- Software Development: (Mobile Native)

Project Supervisor
Catherine Fitzpatrick

SeaSplash is a mobile application aimed towards sea swimmers, who are either new to an area looking for places to swim safely or people who would like to meet up with other swimmers and swim safely in a group. SeaSplash allows users to sign up and login using Firebase authentication. Users can view a list of swim spots which are created by uploading an image and location, which is stored using Firestore. A map of all swim locations is also viewable incorporating Google maps API. Swim meetup events can be created allowing groups of users to organise meeting at a particular beach on a given day.

Technologies: Flutter SDK, Dart, Android, Firebase Auth, Firebase FireStore, Google Maps API

https://bit.ly/hdipseasplash



Server Life Cycle Manager

Not presenting

Academic Title

A Web Application for Managing it Equipment Primarily in Data Center

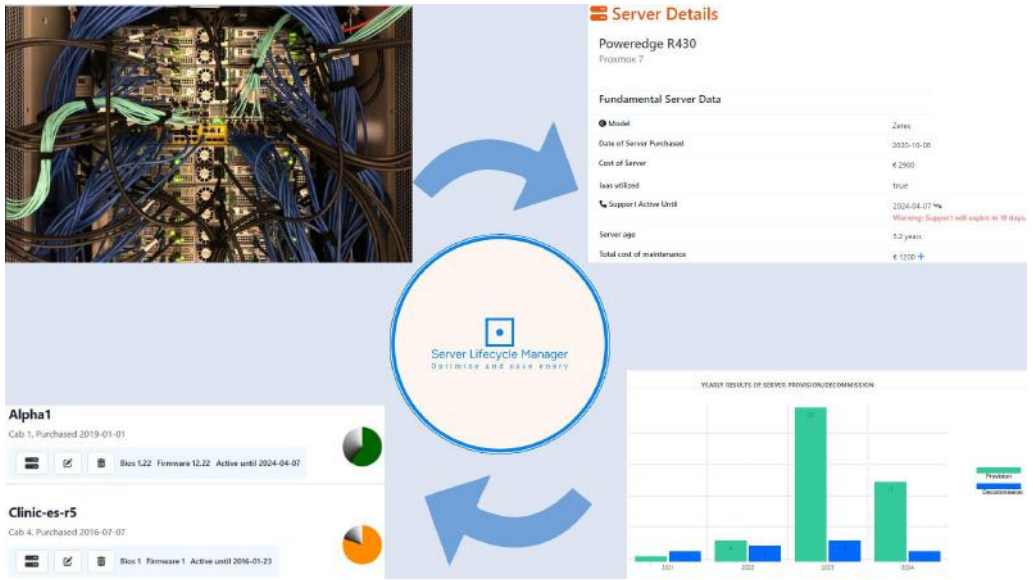
by Tibor Molnar

Project Areas

- Computer Networks
- Computer Security
- Database and Analytics
- Open Source
- Work Based Project
- Software Development: (Back End / Core / Front End / Web)

Project Supervisors

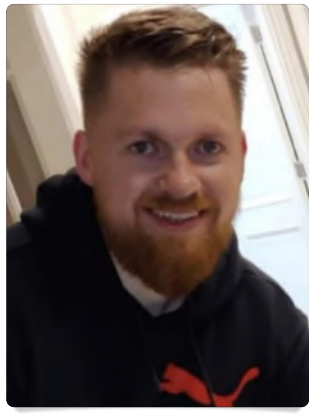
TJ McDonald, Jerry Horgan



LCManager is a web application designed specifically for system administrators to efficiently handle the management and execution of server and software lifecycles. By addressing usual challenges faced in on-premises server rooms, this application offers viable solution to enhance operational efficiency. A key benefit is its capacity to offer users a centralized perspective on the lifecycle phases and ages of all servers. Moreover, LCManager introduces a catalog that enables administrators to identify crucial factors pertaining to server updates, disposals, and other necessary actions.

Technologies: NodeJs, Hapi, Handlebars, Tailwind CSS, MongoDb, Openstack, Data Center

https://csibman27.github.io/



WoofWatch

Not presenting

Academic Title

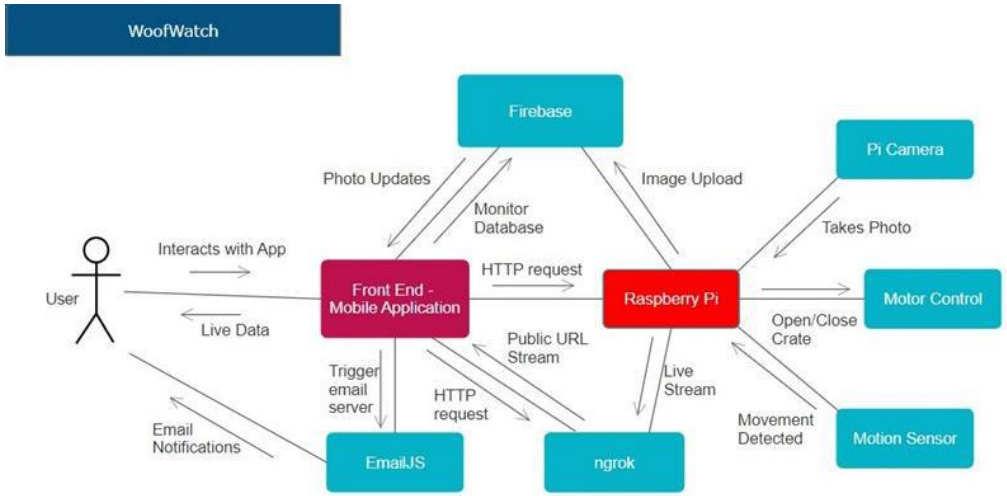
Pet Welfare Through IoT: A Raspberry Pi and Mobile Based Pet Monitoring and Interaction System

by Donal Murphy

Project Areas

- Internet of Things
- Personal Independent Project

Project Supervisor
John Rellis



'WoofWatch' aims to cater to the needs of pet owners who seek convenient monitoring and interaction of their housed pets. Leveraging a Raspberry Pi, a connected camera, servo, and motion sensor, the system will integrate with a mobile phone. 'WoofWatch' detects pet movements and sends notifications. Live video streaming functionality offers real-time insights into their pets' activities, allowing owners to make informed decisions about letting their pets in or out of their designated living spaces.

Technologies: Networking, Scripting, IoT

https://donaldo1991.github.io/woofWatch/

AO-AutoScaler Operator

#62 / TL238

Academic Title

An Operator That Enables Dynamic Scaling of an Application on OpenShift/Kubernetes

by Conor O'Malley

Project Areas

- Cloud Computing
- DevOps
- Open Source
- Software Development: (Back End)

Project Supervisor
John Rellis

An operator for dynamic web application scaling on OpenShift/Kubernetes, leveraging technologies like OpenShift for containerised application management and Docker for container deployment. It will be developed in Golang, utilising the Operator SDK framework.

Technologies: Kubernetes, Openshift, Operators, Docker, Golang

https://conorom1.github.io/AO-Autoscaler-Operator/

SiteVisor

#63 / TL238

Academic Title

Digital Twin Application for Buildings Monitoring and Asset Management

by Grzegorz Piotrowski

Project Areas

- Cloud Computing
- Internet of Things
- Open Source
- Personal Independent Project
- Software Development: (Web)

Project Supervisor
Caroline Cahill

SiteVisor is a Digital Twin based web app for environmental monitoring of buildings, with elements of asset management. At the core of the user interface is an interactive 3D viewer, rendering a building and the IoT sensors. With only a few clicks we can set up our 3D environment from scratch, by simply sketching out rooms and creating virtual sensors and configuring the data connection from their physical counterparts. The application is deployed on Kubernetes and uses Strimzi operator to run Apache Kafka cluster, which is the heart and arteries of the whole system.

Technologies: Kubernetes, Kafka, Strimzi, Three.js, Django, SvelteKit, Websocket

http://bit.ly/49A3foT

KCloud

#64 / TL238

Academic Title

IIOT Customizable Solution for Data Transfer in Small to Medium Industrial Control

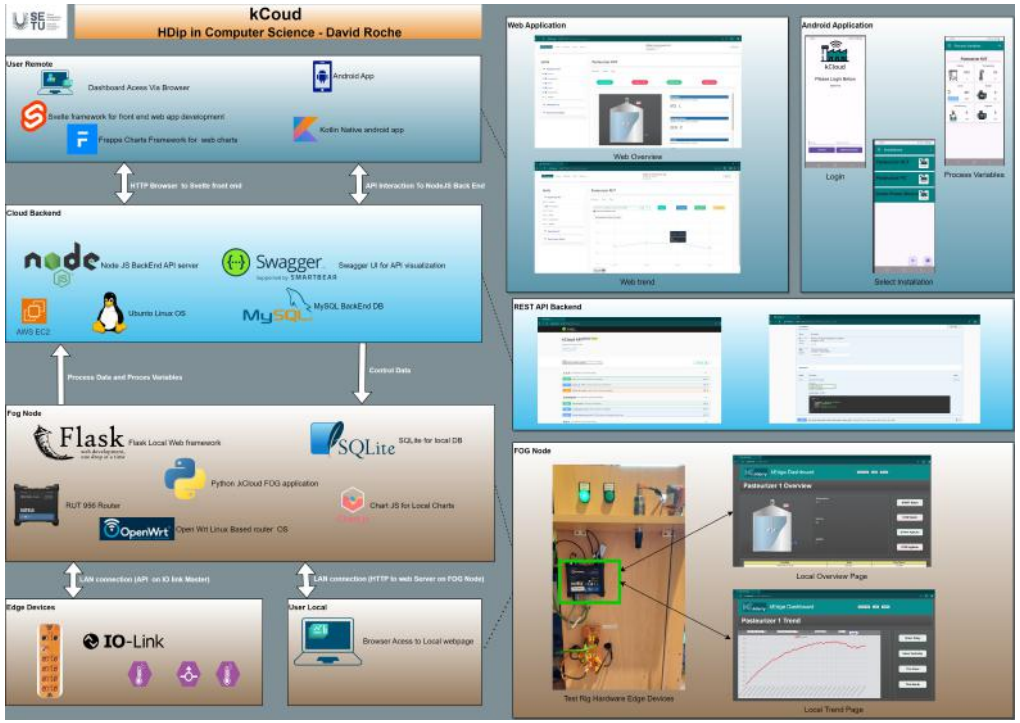
by David Roche

Project Areas

- Internet of Things
- Work Based Project

Project Supervisor

Caroline Cahill



This is work-based Industrial Internet of Things project developed for Kilderry Instruments Ltd. It uses the knowledge gained during this course to develop an adaptable IIOT solution that will allow us to offer a greater range of services to our existing and prospective customers in the area of Industry 4.0. Using a real-world sample application written in Python with local control and monitoring via browser, RESTful API cloud connectivity and, Svelte front end this project will be used as a foundation to update existing systems and as the basis for completely new developments.

Technologies: Python, SQLite, Flask, MySql, Node JS, Frappe Charts, Charts JS, Kotlin, Svelte, Swagger

http://www.djroche.ie/#kcloud

SwapN

Not presenting

Academic Title

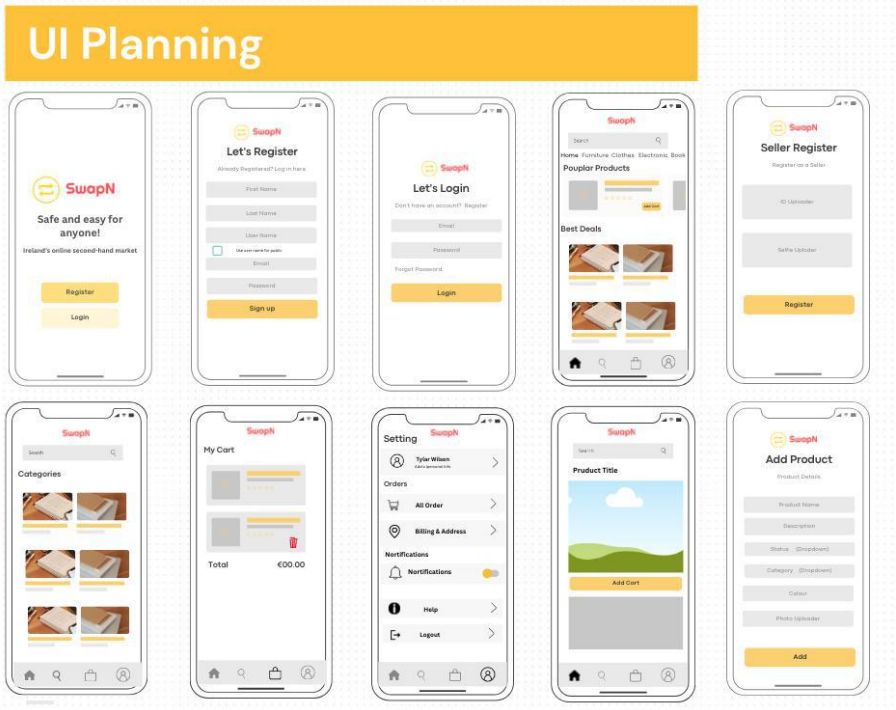
Second Hand Shopping App: SwapN

by Natsumi Shimizu

Project Areas

- Software Development: (Mobile Native)

Project Supervisor
Dave Hearne



Android application for a second-hand shopping platform. The aim is to build user interfaces that are easy to use and attractive and enable secure and efficient transactions. Furthermore, the platform aims to comprehensively provide functions related to used goods transactions, such as product search and filtering functions, review systems, and online payments. Safety and reliability are also key focuses. Personal information is protected through user registration and login, ensuring transparency and reliability of transactions.

Technologies: Kotlin, Firebase, Google Colud, Stripe

https://nat1902.wixsite.com/final-project-showca

Snapsite.pro

Not presenting

Academic Title

Computer Vision and Natural Language Processing for Website Creation, Deployment and Hosting Tools

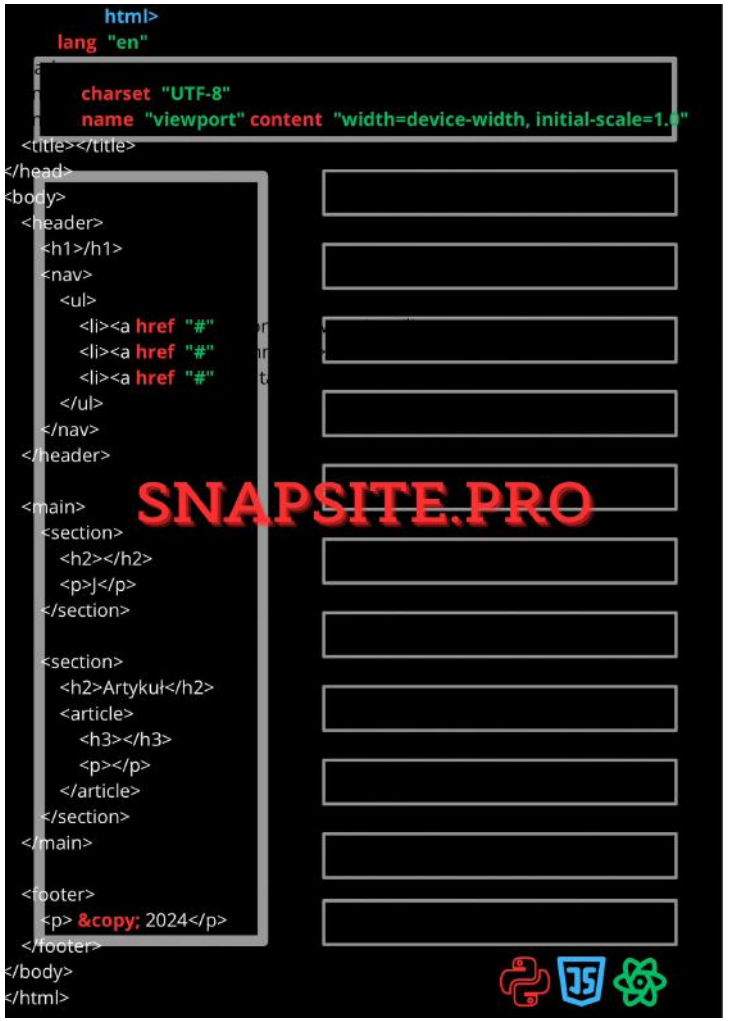
by Wojciech Skrzynski

Project Areas

- Artificial Intelligence
- Automotive and Automation
- Software Development: (Back End / Core / Front End)

Project Supervisor

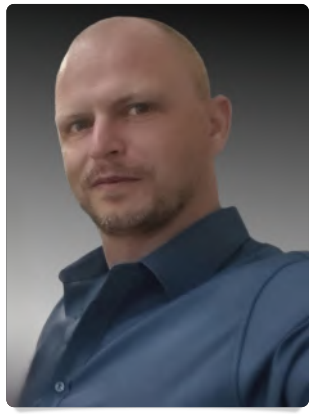
Eamonn de Leastar



This abstract introduces an innovative application that automates the creation of React websites based on shapes designed in Microsoft Paint, offering users the ability to manipulate CSS styles through intuitive input controls. Leveraging Python, Flask, and React, this solution revolutionizes the process of web development by seamlessly integrating design and customization. This project presents a novel approach to web development that combines automated website generation with dynamic CSS manipulation. By leveraging Python, Flask, and React, this solution offers a streamlined workflow for creating visually appealing and customizable websites from Paint designs

Technologies: Python, Machine Learning, Javascript, React

http://www.snapsite.pro



The Great Filter

Not presenting

Academic Title

The Great Filter Ultimate Tech-talent Recruitment Tool

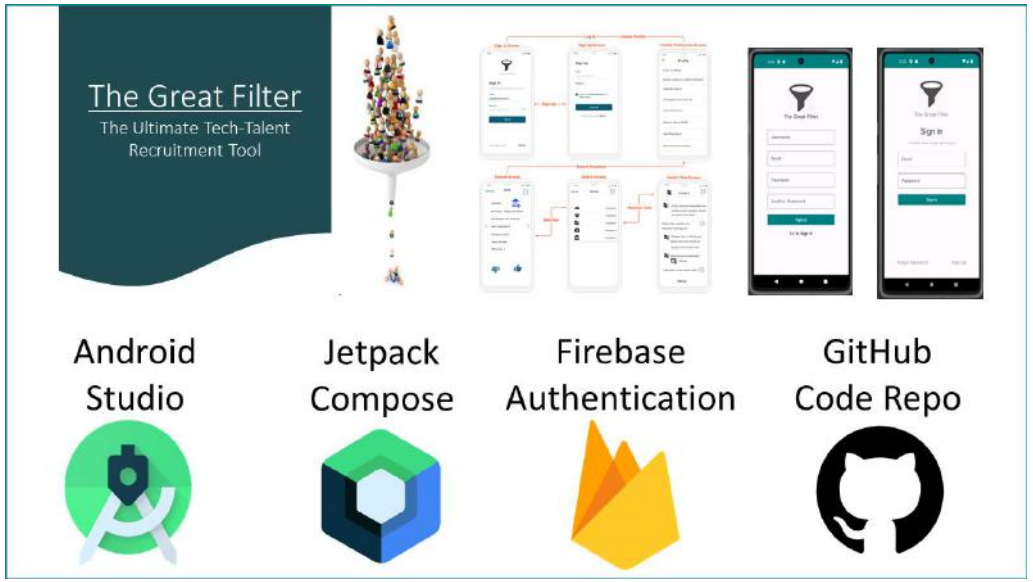
by Gavin Soady

Project Areas

- Software Development: (Mobile Native)

Project Supervisor

Catherine Fitzpatrick



The Great Filter is an innovative mobile app dedicated to optimizing the recruitment journey.
This app is designed to efficiently connect job positions with the most fitting candidates by implementing advanced filtering mechanisms, reducing noise and expediting the employment process for both Job Seekers and Employers
Job Seeker will gain exclusive access to a curated list of employers and relevant job positions tailored to their skills and preferences.
Employers will have a focused view of potential candidates that align with their specific job requirements.

Technologies: Android Studio, Kotlin, Jetpack Compose

https://bit.ly/4a3jsDV

Vimo.lt

Not presenting

Academic Title

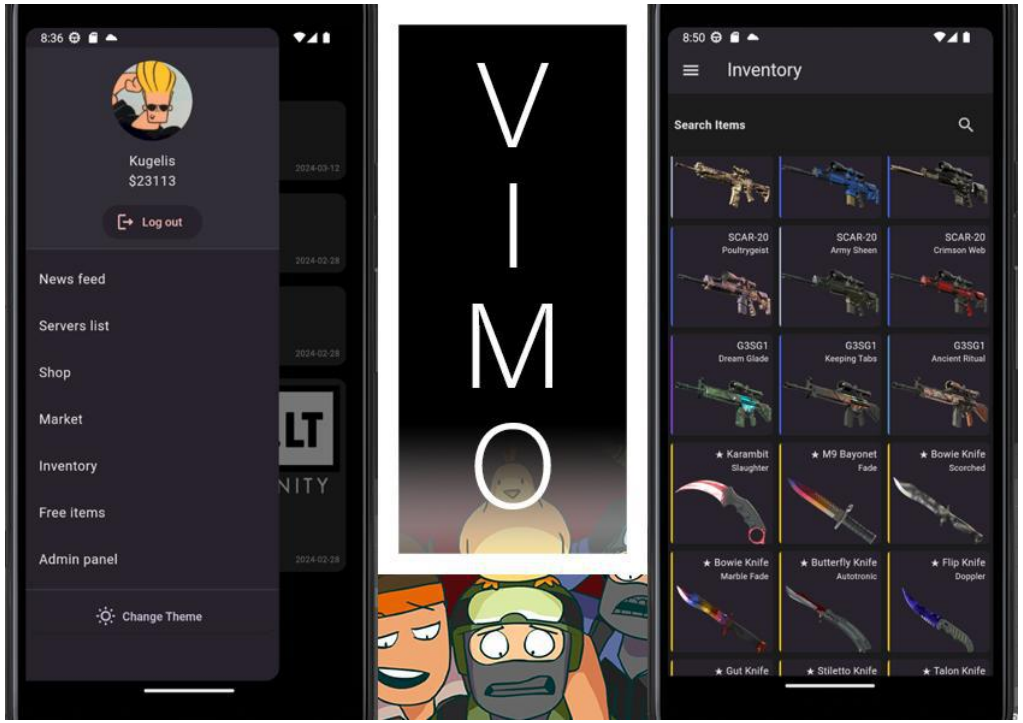
Cross-platform Mobile Application for Gaming Community

by Vidmantas Valskis

Project Areas

- Personal Independent Project
- Software Development: (Back End / Mobile Hybrid)

Project Supervisor
Catherine Fitzpatrick



For the past 12 years I've been hosting and developing unique game servers, mainly focused on competitive first-person shooter game called Counter-Strike. In doing so I created a community of roughly 7,000 people. The community has grown, my services evolved, becoming a hub & a platform of sorts for like-minded people oriented around gaming. This project aims to further enhance the user experience by introducing a cross-platform mobile application which would encapsulate many other platforms created along the way, bringing them all to one place. One app, to rule them all.

Technologies: Hapi, Node.js, MariaDB, Flutter, Dart

https://vimo.lt/setu

Ollscoil Teicneolaíochta an Oirdheiscirt
South East Technological University

SECTION 3
MASTER IN SCIENCE PROGRAMMES — MSC

PROJECT BROCHURE

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MSc in Computing (Enterprise Software Systems)

The aim of the MSc in Computing (Enterprise Software Systems) is

to produce graduates with the necessary knowledge, skills and expertise in the development and management of software systems. The course also confers on the graduates a set of personal and professional attributes that will allow them greater flexibility in the development of their own career options, over the span of their career. Specifically, the course aims to produce graduates who can:

- Reason and problem-solve to a high level in the context of enterprise software and its role in business, industry and research.
- Participate constructively in the strategic deployment of enterprise software in a mobile or cloud environment.
- Manage the development of high-quality enterprise software products and services.
- Undertake research-based projects, providing effective advice and leadership where required.

Sentiment Analysis in E-learning

#65 / Poster Board

Academic Title

Sentiment Analysis in E-learning: Understanding Student Engagement and Satisfaction

by Britty Abraham

Project Areas

- Machine Learning
- Software Development: (Core)

Project Supervisor

Patrick Felicia

The emergence of e-learning has fundamentally changed conventional education models, demanding a sophisticated comprehension of students' encounters. As technology-driven platforms become essential, accurately assessing student mood becomes crucial for optimizing learning settings. This study aims to fill the gap in understanding student involvement and satisfaction in e-learning environments using sentiment analysis. The study aims to apply advanced computational methods to analyze and understand the emotional tone of students.

Technologies: Python

https://github.com/20105650

Comparative Study of Iac Tools

#66 / Poster Board

Academic Title

A Comparative Study on the Provisioning Time of Terraform and Ansible in Infrastructure as Code

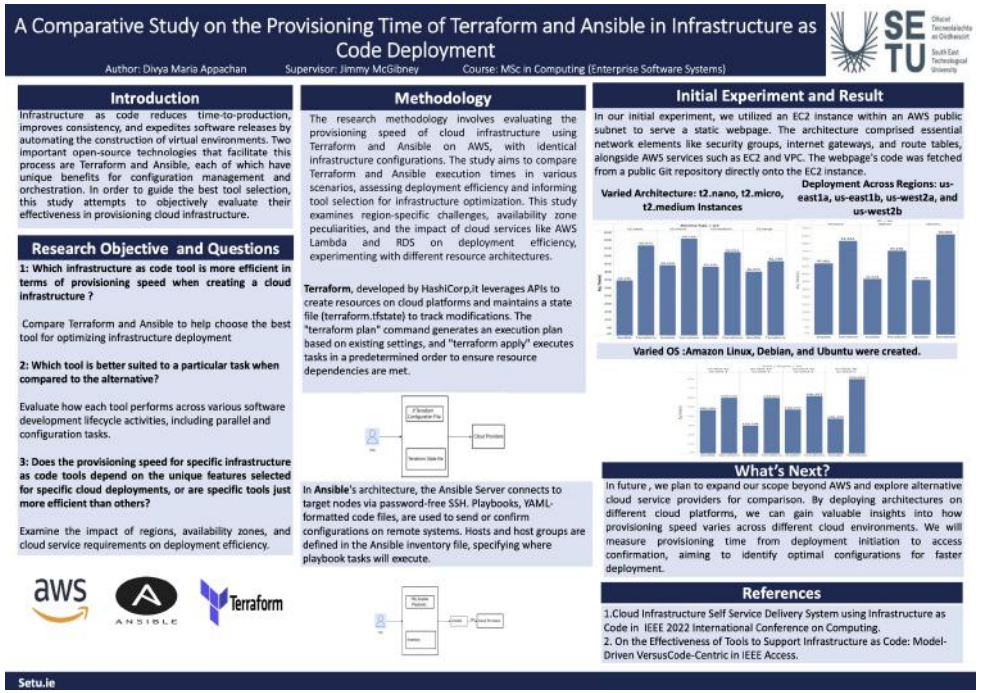
by Divya Maria Appachan

Project Areas

- Artificial Intelligence
- DevOps

Project Supervisor

Jimmy McGibney



This research paper presents a comprehensive comparative study of two popular infrastructure as code solutions, Terraform and Ansible. Infrastructure as Code has become a fundamental practice in modern IT operations, enabling the automation and management of cloud infrastructure and resources. Terraform and Ansible are two leading infrastructure as Code tools that have gained prominence in the field. The research methodology involves evaluating the provisioning speed of Terraform and Ansible.

Technologies: Terraform, Ansible, AWS

https://bit.ly/4dKVBeg

User Centered Design in Software

#67 / Poster Board

Academic Title

Incorporating User Centred Approach in Agile Software Development

by Serene Babu

Project Areas

- Software Development: (Web)

Project Supervisor

Lizy Abraham

Agile Software Development (ASD) has proven to solve the problems faced by traditional approaches. However, studies show that the depth of understanding a user's needs is limited when building a solution by only using ASD. This gap of empathising with a user can be solved by integrating Design Thinking (DT) into ASD. This study aims to test the approach most suggested by researchers and practitioners which is upfront design, followed by the development using Agile framework. I am using DT with ASD and test the resulting product for its usability using the usability parameters.

Design Thinking in Software Engineering

SETU Ollscoil Teicneolaíochta an Oirdheiscirt South East Technological University

Abstract

Design Thinking (DT) has found its way into software development practices across a spectrum of organizations, spanning from startups to major corporations. It serves as a catalyst for exploring problems and nurturing innovative solutions, seamlessly blending with agile methodologies to address the genuine needs of stakeholders.

There is a plethora of DT tools and techniques that form the toolkit to perform DT activities, however, there is a lack of studies mentioning strategies to support the decision process of which techniques to use and detailing which contextual factors.

This research uses the existing recommendation tools to select the Design Thinking techniques to be used in the requirement elicitation stage of software development and tests for the usability of the product. From the encountered usability issues, we can identify and measure the issues related to inefficient requirements elicitation.

Research Questions

RQ1: What are the factors to be considered when selecting DT techniques in the Requirements elicitation stage of Agile Software Development.

RQ2: What is the impact on usability of the product when a solution is developed using the DT techniques suggested by the existing recommendation tools?

Methodology

Solution to RQ1:
Problem Identification and Agile Adoption: Begin by identifying a problem that requires a software solution and adopting Agile methodology for its development.
Requirement Elicitation with DT Techniques: In the requirement elicitation phase, leverage Design Thinking (DT) techniques to identify user needs effectively. Utilize the DT Assistant for Requirements Elicitation (DTA4RE), a recommendation tool consisting of a techniques' repository and a recommendation questionnaire. Select the most suitable DT techniques for the given context.
User Needs Identification: Conduct studies using the selected techniques to identify user needs comprehensively. This process aligns with Agile methodology's focus on iterative development and customer collaboration.

Solution to RQ2:
Agile Development: Implement the software development process following Agile principles, including iterative development in small sprints.
Usability Testing: Conduct usability tests to evaluate the effectiveness of the designed software solution in meeting user needs. Use established usability parameters to assess the usability of the product.
Evaluation of DTA4RE: Assess the reliability and accuracy of DTA4RE in recommending DT techniques by comparing its suggestions with the outcomes of usability testing.

Initial Results

Problem Identification: In Ireland, there exists a significant demand among international students, short-term visitors, and local residents for everyday items available for rent, as opposed to purchasing them outright. Conversely, numerous local residents possess surplus belongings within their households that could be rented out to meet this demand, thereby providing an opportunity for additional income generation. However, the absence of a convenient and efficient platform for facilitating peer-to-peer rentals within localities poses a challenge in connecting renters with available items and optimizing the rental process.
Requirement Elicitation with DT Techniques: To identify the needs of this user group, used the DTA4RE tool to identify the best DT techniques which can be used in this scenario. After conducting the study based on the techniques' repository and recommendation questionnaire, identified that user personas and user scenarios could potentially reveal the user needs
User Needs Identification: Conducted studies using the Personas and scenarios and found the requirements of user in terms of the two primary user groups: Renters (people who rent from others) and Providers (people who rent out their items)

What's Next

Agile Development: Proceed with the development phase using React, a versatile front-end JavaScript library, and Typescript for the backend. Utilize Agile methodologies to iteratively build and refine the software solution.
Usability Testing: Conduct comprehensive usability tests to evaluate the effectiveness of the developed software in meeting user needs. Employ established usability parameters to assess the user-friendliness and functionality of the product.
Evaluation of DTA4RE: Analyse the alignment between the tool's suggestions and the actual usability of the software solution to determine its effectiveness in guiding the development process.

Conclusion

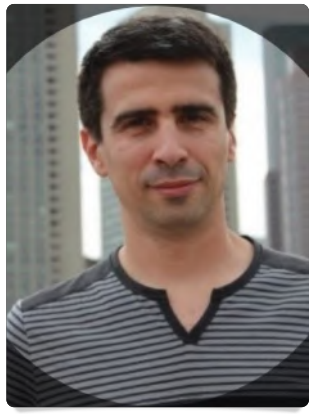
This research has demonstrated the value of integrating Design Thinking (DT) techniques into the software development process, particularly during the requirement elicitation stage. By bridging the gap between user requirements and software design, this research contributes to the advancement of Design Thinking practices in software engineering, ultimately enhancing the development process and delivering solutions that better align with user needs.

Department: Msc in Computing (Enterprise Software Systems)
Author: Serene Babu (20105064)
Supervisor: Lizy Abraham

setu.ie

Technologies: ReactJs, Figma

https://github.com/serenebabu2022/Rentara



Code Generation for RESTful API Services

#68 / Poster Board

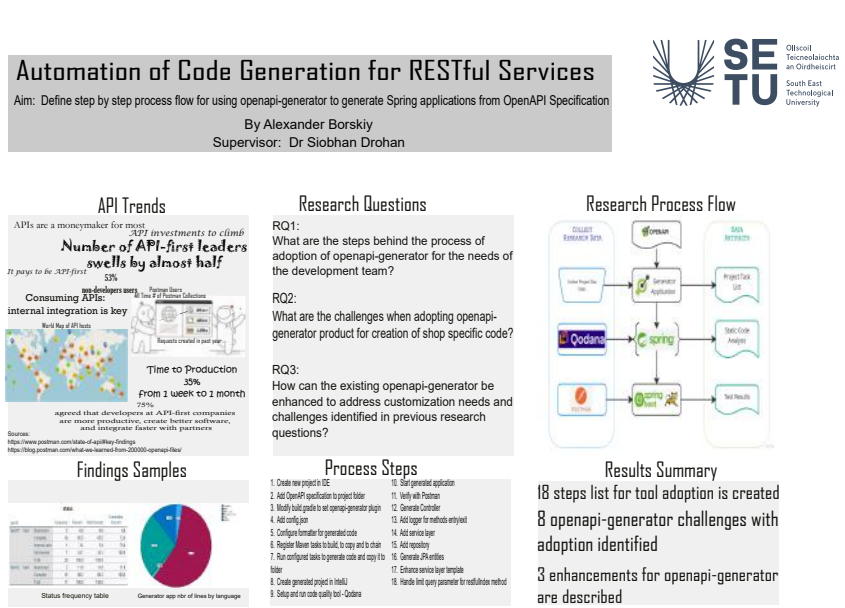
Academic Title

Automation of Code Generation for RESTful Services

by Alexander Borskiy

Project Areas

- Information Systems and Modelling
- Software Development: (Core / Web)



The RESTful API popularity has driven the demand for rapid development and deployment of such applications. The open-source project, openapi-generator, facilitates the creation of server stubs for REST application, offering generators for various programming languages with configurable options. This research explores the tool's capabilities, examines the steps involved in synthesis of an OpenAPI specification for generating functional RESTful applications, and documents challenges in the generation process and openapi-gateway expansion. Finally, the research will recommend framework for generation process and will attempt to propose enhancements.

Technologies: openapi-generator, REST, API, Openapi specification, swagger

setu.ie

https://github.com/aborskiy/spec-to-rest-generator

Navigating Cloud: Challenges, Components

#69 / Poster Board

Academic Title

Cloud Navigation: Challenges, Components, Strategies for Novices & Startups

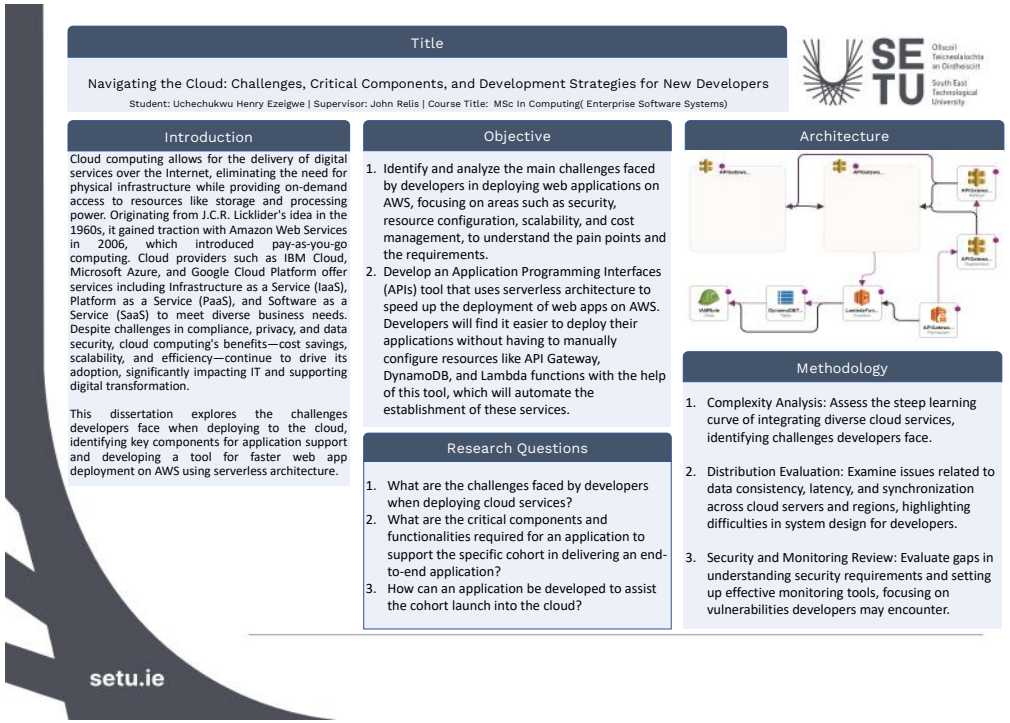
by Uchechukwu Henry Ezeigwe

Project Areas

- Cloud Computing
- Software Development: (Front End)

Project Supervisor

John Rellis



This project proposal outlines a research endeavor aimed at understanding and addressing the challenges inexperienced cloud users face when launching products into the cloud. It seeks to identify key factors hindering their progress and explore methods to develop applications that can assist this group. The project will investigate the complexities of cloud services, the distributed nature of the cloud, observability and monitoring, and security concerns faced by novice users. Additionally, it will examine critical components and functionalities necessary for supporting these users in developing end-to-end applications. The proposed research also includes exploring strategies for developing applications tailored to help novices transition into the cloud environment.

Technologies: AWS, NodeJS, ReactJS, Javascript

https://github.com/mezebu/CloudLaunchSupport

#70 / Poster Board

Academic Title

Monolithic in the Microservices Era: A Comprehensive Analysis of Architectural Choices

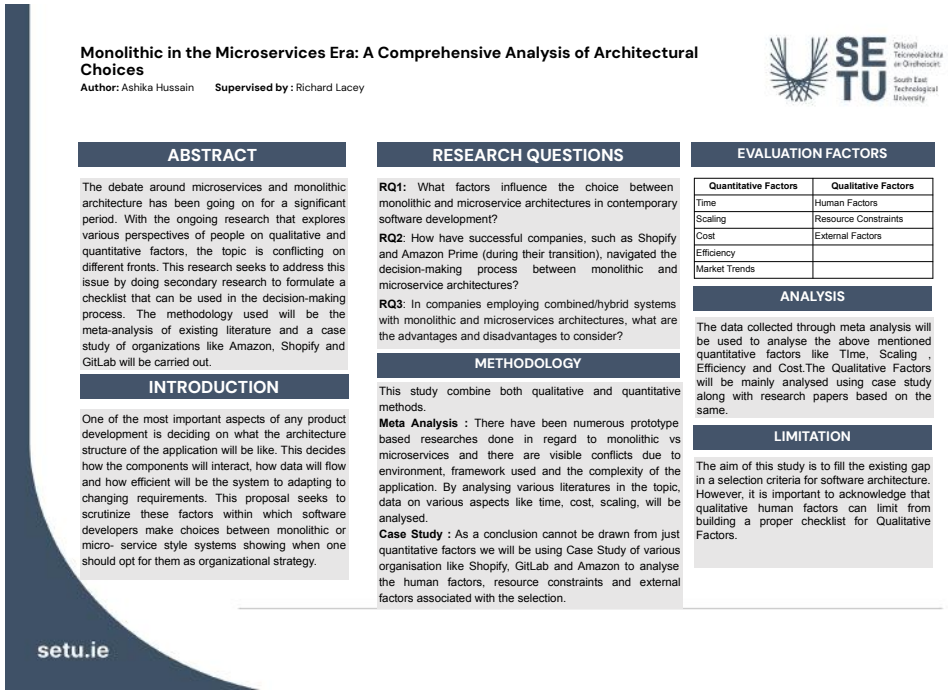
by Ashika Hussain

Project Areas

- CI/CD & Testing
- Cloud Computing
- Database and Analytics
- Information Systems and Modelling
- Software Development: (Core)

Project Supervisor

Richard Lacey



The debate around microservices and monolithic architecture has been going on for a significant period with ongoing research that explores various perspectives. Despite the research on this topic, determining the architecture remains challenging due to conflicting reasons cited. This research seeks to address this issue by doing secondary research and creating a checklist to aid their decision-making process. For this research, a meta-analysis involving a systematic review of the existing literature and case-study research of organizations like Amazon, Shopify, etc will be carried out.

Technologies: Qualitative analysis

https://github.com/ashika-hussain/dissertation

Securing Password Storage

#71 / Poster Board

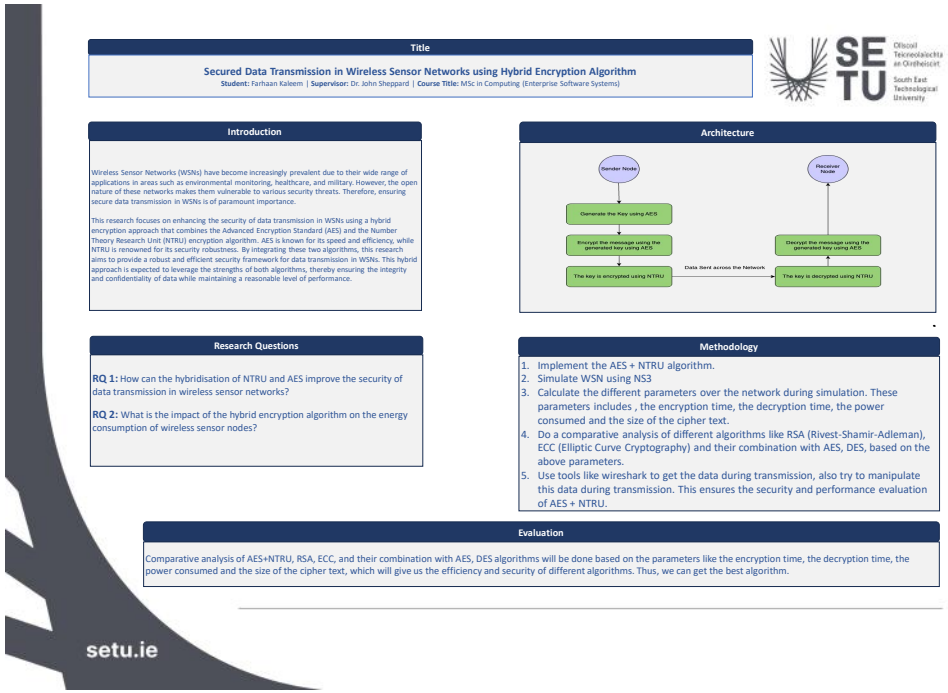
Academic Title

Securing Password Storage Using Hybrid Approach of Hashing and Encryption

by Farhaan Kaleem

Project Areas

- Computer Security
- Software Development: (Web)



When passwords are stored in databases, they are stored as hashed values. These hashed values have signatures attached to them, which when seen by the attackers gives them the idea about the algorithm used. These algorithms can be argon2, Bcrypt and so on.
This paper proposes that instead of just hashing and storing the passwords, they should also be encrypted after being hashed. The algorithm used for encryption is AES and the algorithm used for hashing is Argon2.
The motivation for this paper is that as we see many banks, hospitals store user sensitive data it becomes essential to protect these data. These sensitive data if is hacked or leaked by the hackers can cause issues both legally as well as trust of the customers can be lost. Hence this research paper.

Technologies: Database, AES Algorithm, Argon2 Algorithm, JavaScript

https://sample.com

Tutors Analytics & Visualisation

#72 / Poster Board

Academic Title

A Learning Analytics Information Model and Visualisation Framework for Tutors

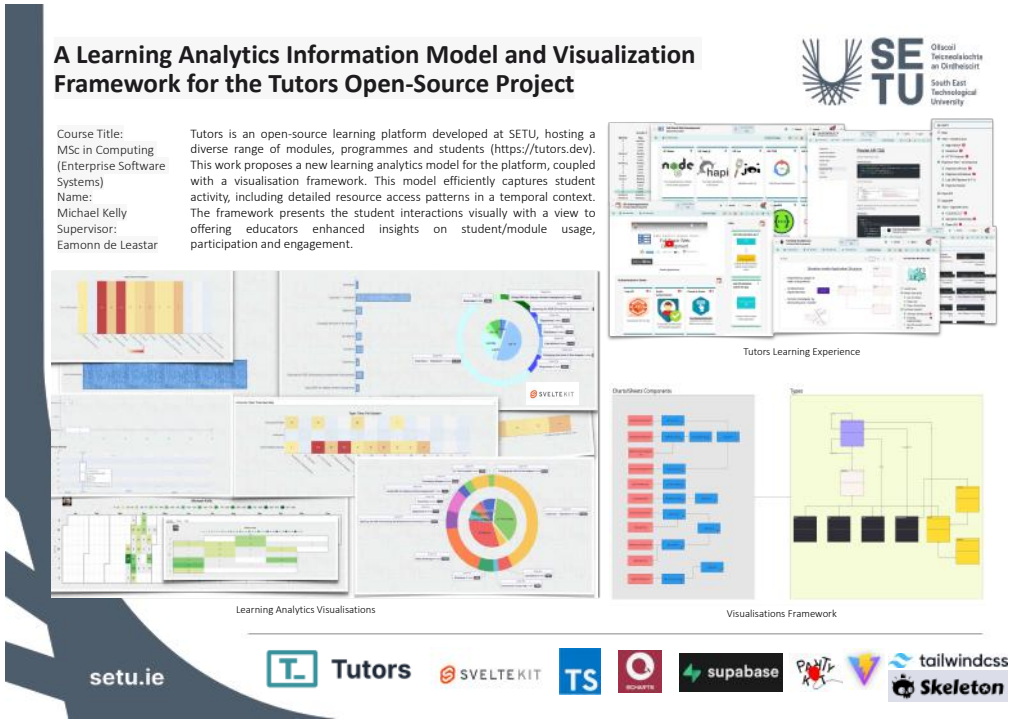
by Michael Kelly

Project Areas

- Database and Analytics
- Information Systems and Modelling
- Open Source
- Software Development: (Back End / Core / Front End / Web)

Project Supervisor

Eamonn de Leastar



Tutors is an open source learning platform developed at SETU, hosting a diverse range of modules, programmes and students (https://tutors.dev). This work proposes a new learning analytics model for the platform, coupled with a visualisation framework. This model efficiently captures student activity, including detailed resource access patterns in a temporal context. The framework presents the student interactions visually with a view to offering educators enhanced insights on student/module usage, participation and engagement.

Technologies: Typescript, SvelteKit, Tailwind, Skeleton, SQL, Supabase, OAuth, RPC, E-Charts, PartyKit, WebSockets

https://michael-kelly-20041540.netlify.app/

#73 / Poster Board

Academic Title

Optimized Three-pivot Quicksort Algorithm

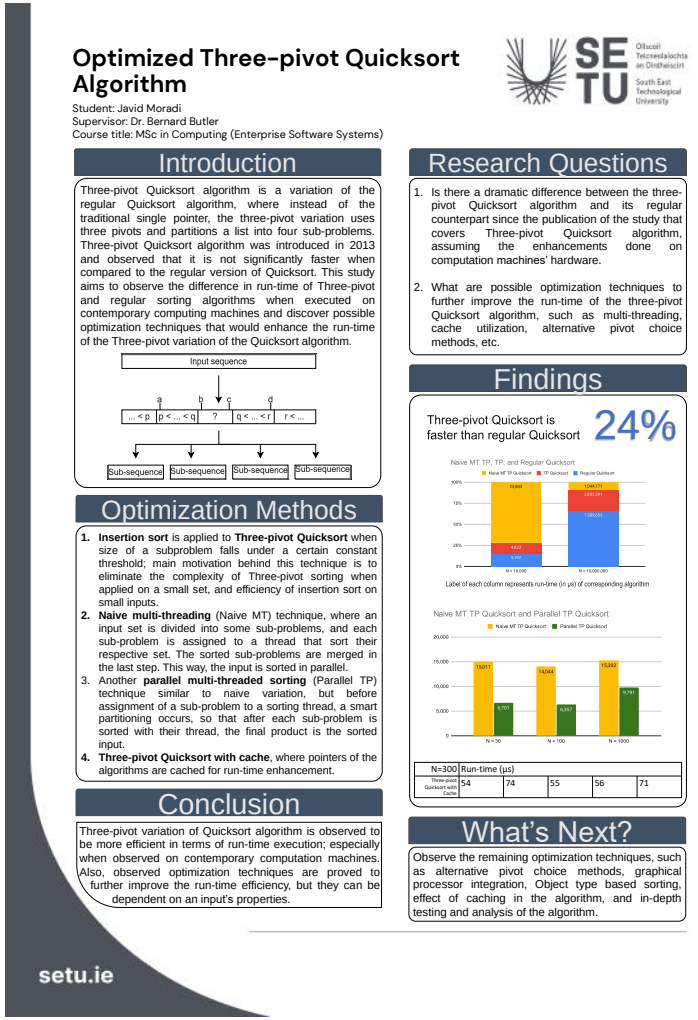
by Javid Moradi

Project Areas

- Software Development: (Core)

Project Supervisor
Bernard Butler

Three-pivot Quicksort algorithm is a variation of the regular Quicksort algorithm, where instead of the traditional single pointer, the three-pivot variation uses three pivots and partitions a list into four sub-problems. Three-pivot Quicksort algorithm was introduced in 2013 and observed that it is not significantly faster when compared to the regular version of Quicksort. This study aims to observe the difference in run-time of Three-pivot and regular sorting algorithms when executed on contemporary computing machines and discover possible optimization techniques that would enhance the run-time of the Three-pivot variation of the Quicksort algorithm.



Technologies: Cuda, C++

https://github.com/JavidMoradi/msc-computing

Autonomous Vehicle AI Solutions Architec

#78 / Poster Board

Academic Title

AI in Autonomous Vehicle

by Pratik Ealumalai Mudliyar

Project Areas

- Artificial Intelligence
- Automotive and Automation
- Database and Analytics
- Game Development
- Internet of Things
- Machine Learning

AI in conjunction with vehicular technology plays a vital role in the autonomous vehicle ecosystem that seeks to take safety, efficiency, and innovation to new heights. AI Technologies within autonomous vehicles are driven by the commercial front roles including “AI in Autonomous Vehicle Product Manager,” “Autonomous Vehicle AI Solutions Architect,” and “Director of AI Integration for Autonomous Systems”.

Optimizing Latency in IoT Data Processing Through Edge Computing in Smart City Environments: A Study on Real-Time Traffic Management

SETU Ollscoil Teicneolaíochta an Oirdheiscirt South East Technological University

INTRODUCTION

In the bustling landscape of smart cities, the effective management of data is pivotal for ensuring seamless operations and enhancing the quality of life for citizens. Among the myriad applications of Internet of Things (IoT) technology, real-time traffic management stands out as a critical component in optimizing urban mobility and reducing congestion. In this era of interconnected devices and vast data streams, the traditional centralized approach to data processing faces challenges such as latency, bandwidth constraints, and privacy concerns. Edge computing emerges as a promising paradigm to address these issues by decentralizing data processing and bringing computational power closer to the data source. This study delves into the realm of optimizing latency in IoT data processing through the implementation of edge computing infrastructure within smart city environments. Focusing specifically on real-time traffic management, the research aims to explore how edge computing can significantly reduce latency, enabling swift decision-making and proactive interventions to alleviate traffic congestion. By leveraging edge computing resources strategically positioned throughout the urban landscape, the study seeks to analyse the impact on data processing speed, responsiveness, and overall efficiency in managing traffic flow. Furthermore, it endeavours to examine the scalability, reliability, and cost-effectiveness of edge computing solutions in comparison to conventional centralized approaches.

SCOPE

This research explores optimizing latency in IoT data processing using edge computing for real-time traffic control in smart city settings, focusing on scalability, impact on traffic management, interoperability standards, 5G integration, and edge AI.

RESEARCH QUESTION(S)

How might edge computing architecture reduce processing latency for Internet of Things (IoT) data used in real-time traffic management?

How can we best optimize latency in processing data from the Internet Of Things (IoT) at the network's edge for the purpose of traffic management?

In order to control traffic in real- time, what are the main obstacles to adopting edge computing, and how might these be overcome?

METHODOLOGY

This text explores edge computing's role in smart city traffic management, comparing its performance to traditional methods, and suggests future research with AI, 5G, and edge analytics.

PRELIMINARYLITERATURE REVIEW

The literature review explores edge computing in smart cities for real-time traffic management, discussing architectures, latency optimization, AI, and challenges like data privacy, security, and limited resources.

CONTRIBUTIONTORESEARCHKNOWLEDGEANTICIPATED

The study explores edge computing architecture for real-time traffic management in smart cities, highlighting latency reduction, performance metrics, and future research integrating AI, 5G, and edge analytics.

VALIDATION METHODOLOGY

Smart cities are improving traffic management by collecting real-world traffic data from IoT devices and implementing edge computing architectures, improving latency, and analyzing performance metrics.

SPECIAL RESOURCES REQUIRED

The study necessitates the use of real-world traffic data, edge computing infrastructure, IoT devices, traffic simulation software, stakeholder feedback, a testing environment, and expertise in traffic management and edge computing.

Department: Msc in Computing (Enterprise Software Systems)
Author: Pratik Mudliyar (20105247)
Supervisor: Frank Walsh

setu.ie

Technologies: Sensors, Machine Learning, GPS, GNSS, human machine interface

https://github.com/prratiiik/cdk-alb-ec2

AI to Bi: LLMs for Data Visualisation

#74 / Poster Board

Academic Title

To Investigate the Current State of Art of LLMs for the Purpose of Replacing Dashboards

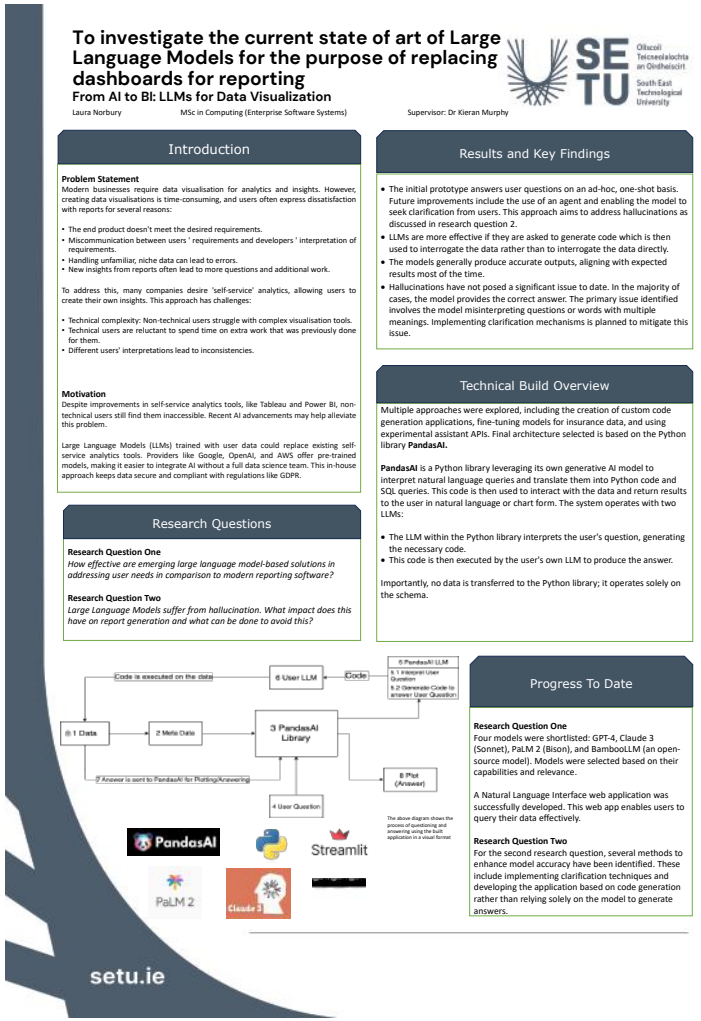
by Laura Norbury

Project Areas

- Artificial Intelligence
- Database and Analytics

Project Supervisor
Kieran Murphy

It is often said that data is the new gold. Many companies desire to use trends in their data to increase revenue. Therefore the need for swift self-service analytics to gain insights from data is growing. The complexity of current data visualisation tools is a barrier to many non-technical users and these tools often come with a high cost. This project will leverage AI, particularly, pre-trained Large Language Models, to bypass third-party software limitations and enable natural language data interaction. The project will assess the capabilities of pre-trained models from major tech firms, aiming to identify the best for self-service analytics. A comparison will give insight into which of the models is best for an organization to use for this use case.



Technologies: GPT4/OpenAI API/ Python (pandas)/ Langchain/ Various AWS Resources +Bedrock/ Google Gemini/Mistral

https://github.com/LauraNorbury/DissertationSubmission

Artificial Intelligence for Hostels

#79 / Poster Board

Academic Title

Integrating Artificial Intelligence for Optimising Hotel Productivity

by Renu Palappamannil Peter

Project Areas

- Artificial Intelligence

Project Supervisor

John Sheppard

The hospitality industry has seen significant advancements in technology, with AI being a key driver for efficiency and guest satisfaction. AI can improve operational processes, automate repetitive tasks, and offer unique guest experiences. However, the integration of AI into hotels presents challenges, including ensuring privacy and ensuring reliable cybersecurity measures. This study aims to identify potential opportunities and threats associated with AI in the hotel industry, while also addressing the need for intentional integration without disrupting work-flow.

Technologies:

https://github.com/renuppeterW20105518/AI.git

Generative AI Code Migration Pipeline

#75 / Poster Board

Academic Title

Building a Generative AI-powered Code Migration Pipeline for Application Modernisation

by Emma Roche

Project Areas

- Artificial Intelligence
- CI/CD & Testing
- Machine Learning
- Software Development: (Core)

Focusing on leveraging generative AI, the goal of this research is to build an efficient code migration pipeline. This involves incorporating prompt engineering techniques to guide the AI models and developing a robust quality assessment framework using custom unit tests and static analysis tools. The research delves into existing generative AI models, evaluating their benefits and limitations for code migration. The experimental design emphasises automation and quality assurance throughout the pipeline, including data preparation, code migration using generative AI, and an experimental testing framework. The ultimate objective is to streamline the code migration process while ensuring the accuracy, reliability, and efficiency of the generated code.

Technologies: Generative AI Models (e.g., OpenAI's GPT-3.5, GPT-4 Turbo, etc.)

https://github.com/emmaroche/generative-AI-powered-code-migration-pipeline

Analysis of Cross-platform Development

#76 / Poster Board

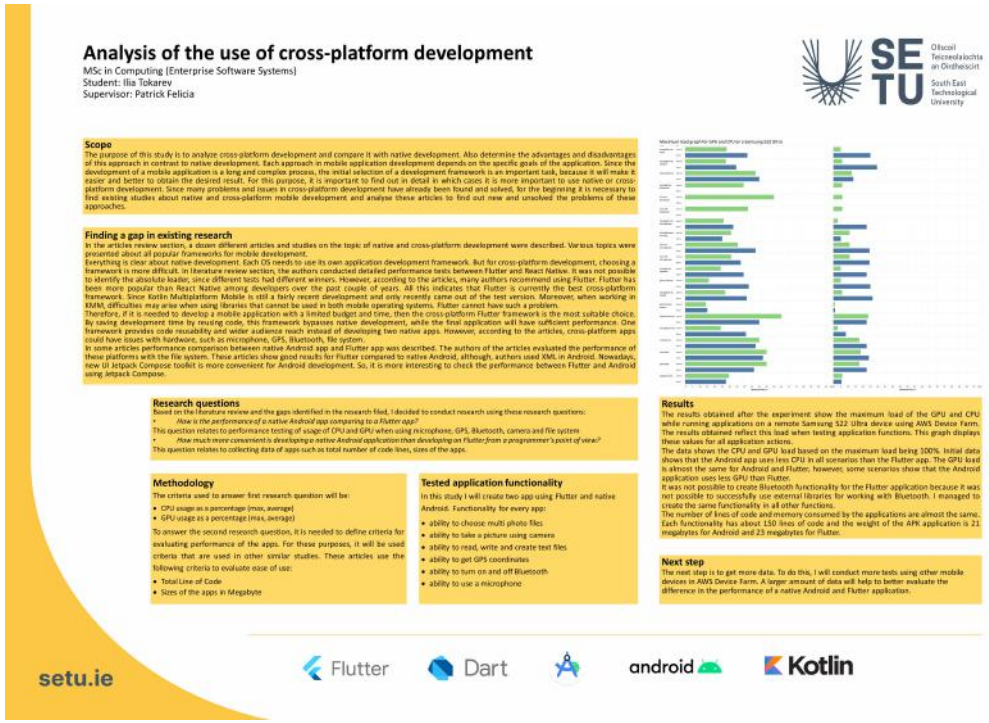
Academic Title

Analysis of the Use of Cross-platform Development

by Ilia Tokarev

Project Areas

- Software Development: (Mobile Native)



The purpose of this study is to analyze cross-platform development and compare it with native development. Also determine the advantages and disadvantages of this approach in contrast to native development. Each approach in mobile application development depends on the specific goals of the application. Since the development of a mobile application is a long and complex process, the initial selection of a development framework is an important task, because it will make it easier and better to obtain the desired result. For this purpose, it is important to find out in detail in which cases it is more important to use native or cross-platform mobile development.

Technologies: Android, Flutter, Firebase, Kotlin, Dart

https://bit.ly/4amyqEm

Web Performance: Mapbox vs. Google Maps

#77 / Poster Board

Academic Title

Comparative Study: Location API Influence on Web App Performance - Mapbox vs. Google Maps

by Madhan Kumar Venugopal

Project Areas

- Software Development: (Back End / Front End / Web)

Web applications increasingly rely on location-based services, ranging from personalized content to real-time geospatial interactions. The integration of location APIs introduces dynamic elements to web pages, potentially influencing the web performance. Therefore, it becomes imperative to measure web performance when incorporating these APIs to ensure optimal user experiences. Moreover, the choice of a location API can significantly influence the overall performance of a web application. Mapbox and Google Maps API are prominent providers of location-based services. Comparing the performance of these APIs in the context of web vitals in a social web application with Google Lighthouse, a performance auditing tool, offers valuable insights for developers and businesses.

Technologies: MongoDB, Express.js, React, Node.js, Google Lighthouse, Mapbox and Google Maps API

https://github.com/JohnMadhan07/dissertation.git

MSc in Computing (Information Systems Processes)

The aim of the MSc in Computing (Information Systems Processes) is

to provide graduates, from any discipline, with a broad sociotechnical perspective of modern information systems and their development. The socio–technical focus renders the MSc in Computing (Information Systems Process) philosophy and objectives as distinct from information technology-oriented programmes.
Whereas information technology oriented programmes focus primarily on the development of technical artefact and data, the MSc in Computing (Information Systems Process) takes a much broader and multidisciplinary perspective to encompass human-centred and organisational processes, knowledge, and values that also comprise an information system and its environment.

CloudBlend: The Future is Here

#80 / Poster Board

Academic Title

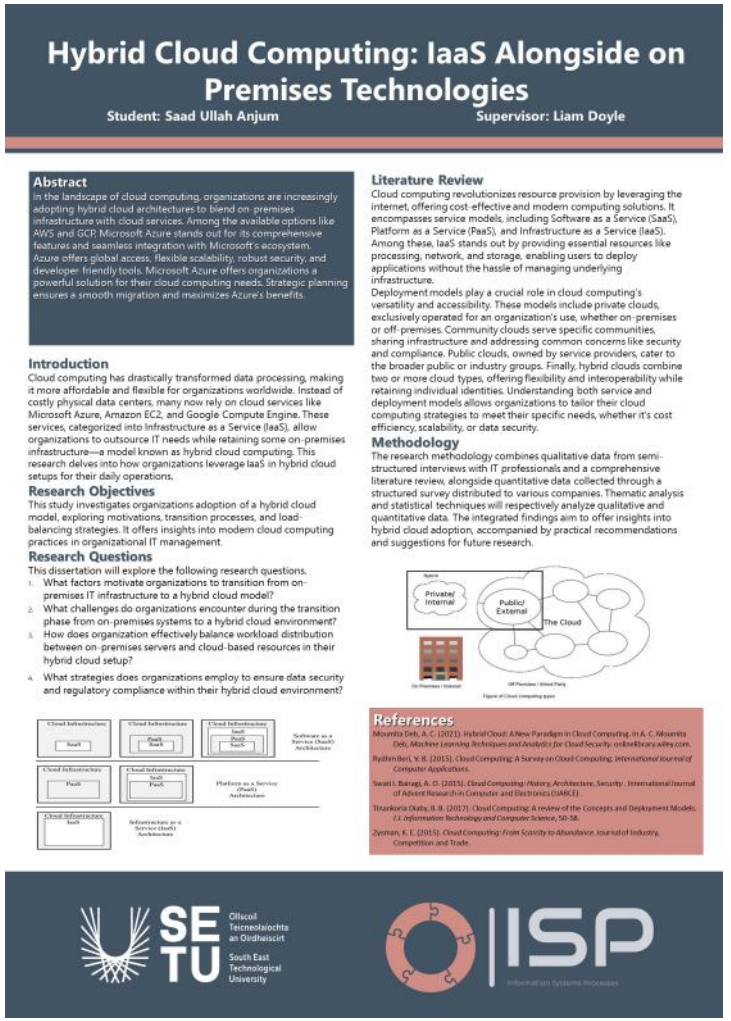
Hybrid Cloud Computing: Infrastructure as a Service (IaaS) Alongside on Premises Technologies

by Saad Ullah Anjum

Project Areas

- Cloud Computing

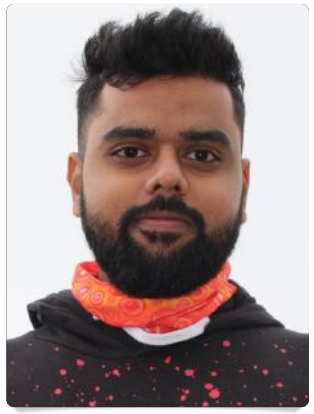
Project Supervisor
Liam Doyle



In the landscape of cloud computing, organizations are increasingly adopting hybrid cloud architectures to blend on-premises infrastructure with cloud services. Among the available options like AWS and GCP, Microsoft Azure stands out for its comprehensive features and seamless integration with Microsoft's ecosystem. Azure offers global access, flexible scalability, robust security, and developer-friendly tools. Microsoft Azure offers organizations a powerful solution for their cloud computing needs. Strategic planning ensures a smooth migration and maximizes Azure's benefits.

Technologies: cloud computing, Infrastructure as a Service (IaaS)

https://bit.ly/3K5n5xM



Embracing Sustainability

#81 / Poster Board

Academic Title

Sustainability in Car Manufacturing Industry Using Edge Computing

by Chandan Bannihatti Gururaja

Project Areas

- Automotive and Automation
- Computer Networks
- Information Systems and Modelling
- Internet of Things

Project Supervisor
Sinead O'Neill

The integration of edge computing into the car manufacturing industry represents a paradigm shift towards sustainability-driven innovation. By harnessing the power of real-time data processing, predictive analytics, and IoT technologies, manufacturers can optimize resource utilization, minimize waste, and reduce environmental impact across the entire production cycle. Embracing sustainability through edge computing not only aligns with consumer expectations and regulatory requirements but also fosters a more resilient and environmentally responsible future for the automotive industry.

Technologies: Edge Computing supported devises

https://bit.ly/3UZwAou

Edge Computing Solution for Smart City

#82 / Poster Board

Academic Title

Implementing Edge Computing in IoT-based Smart Cities

by Anus Farid

Project Areas

- Cloud Computing
- Computer Networks
- Internet of Things

Project Supervisor
Liam Doyle

Edge computing technologies within smart cities operating on IoT frameworks is crucial for several reasons. For starters, it enables real-time data processing, which promotes quick decision-making and action. This factor is critical for improving the efficiency and responsiveness of municipal systems such as traffic management, environmental monitoring, and public services. The findings of this study are expected to offer valuable insights, guiding further advancements in IoT technologies within the realm of smart cities.

Technologies: Edge Computing, Cloud Computing, IOT, Internet

https://online.fliphtml5.com/ppcnb/blct/index.html

How Scrum Product Owners Drive Success

#83 / Poster Board

Academic Title

Studying the Role of the Scrum Product Owner in Different Development Companies

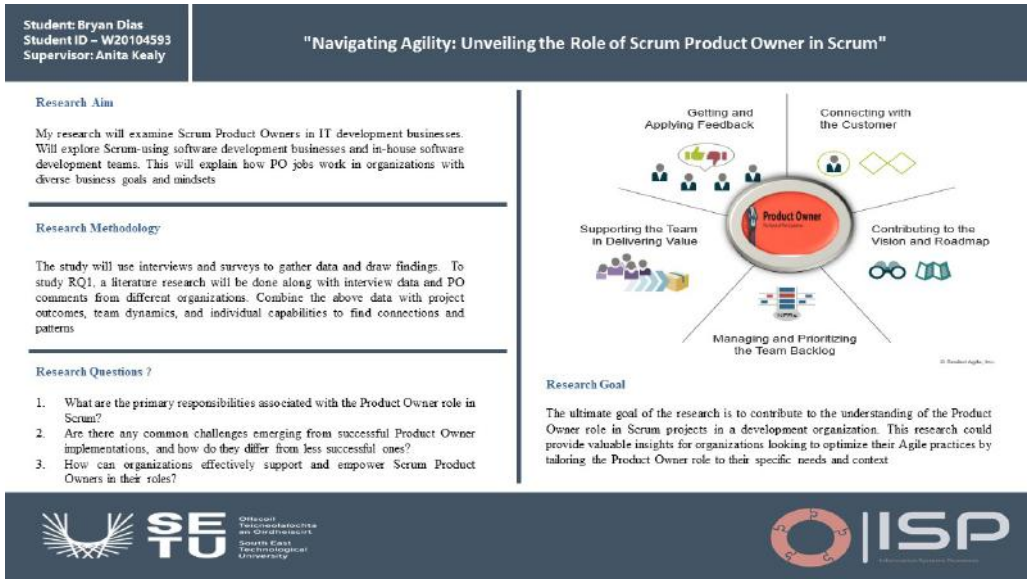
by Bryan Joseph Dias

Project Areas

- Work Based Project

Project Supervisor

Anita Kealy



The aim of my research will be to study the role of the Scrum Product Owner across different IT development companies. Will be researching for Software development companies who use Scrum for product development and also for companies who have Development teams for their inhouse Software development. This will help to understand how the PO roles functions in organizations having different business goals and mindsets. There is a potential diversity in the role of a Product Owner in how it is interpreted and implemented in Scrum across different organizations, industries, and contexts.

Technologies: Agile Scrum

https://github.com/bryan1511/Product-Owner-Bryan-Dias

A Survey to Find the Acceptance

#84 / Poster Board

Academic Title

A Survey: Acceptance of Spanning Tree Protocol and ERPS in IT Infrastructure

by Sushind Mandakathinkal Suresh

Project Areas

- Computer Networks
- Computer Security

Project Supervisor

Anita Kealy

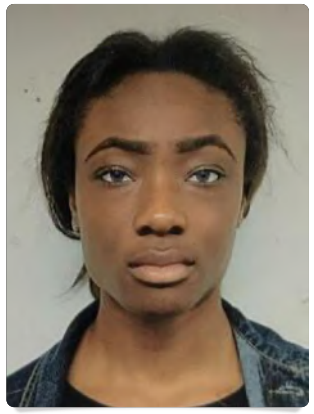
This research survey guides the critical mechanisms of Spanning Tree Protocol (STP) and Ethernet Ring Protection Switching (ERPS), understanding their roles in maintaining network stability, reliability, and efficiency. This research also will help to choose the right metrics to compare the spanning tree protocol technique with ethernet ring protection switching with the help of a survey. The result will then help us understand if these guidelines were able to bring in a significant change in the adoption of ethernet ring protection switching across organisations.

Technologies: Survey, Spanning Tree Protocol, Ethernet Ring Protection Switching

https://github.com/sushindms/student.git

Scaling Agile Methods

#85 / Poster Board



Academic Title

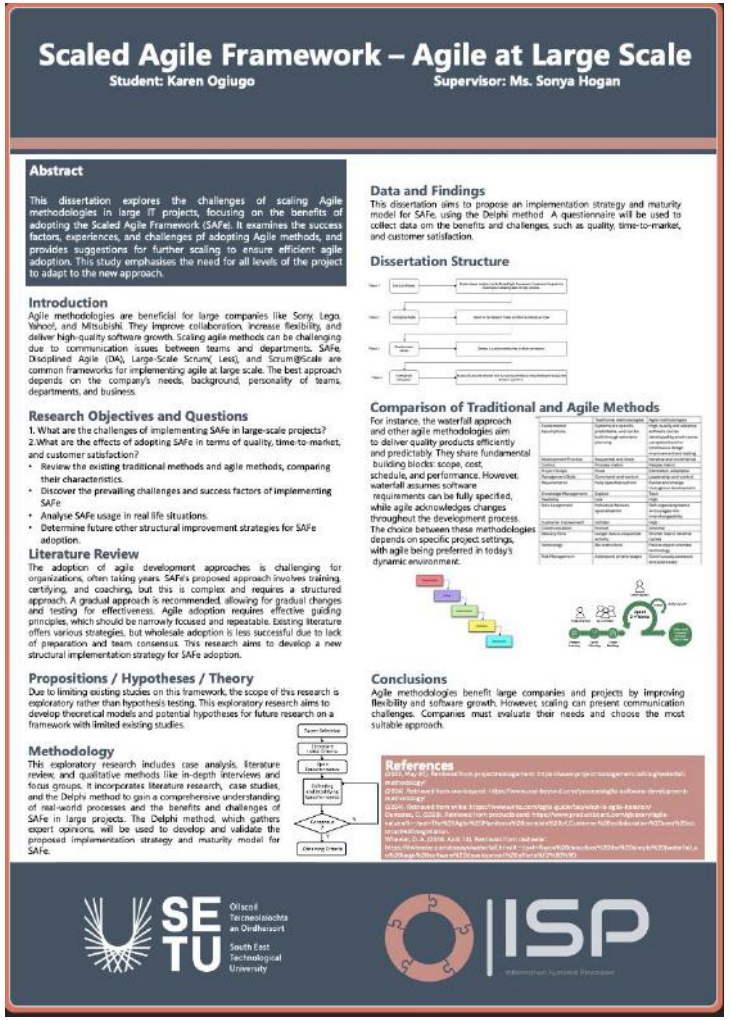
Scaling Agile Methods: Strategies and Challenges in Large Software Development Organisations

by Karen Ogiugo

Project Areas

- Information Systems and Modelling

Project Supervisor
Sonya Hogan



Technologies: Survey tool

https://github.com/velvetkaren/KarenOgiugo

Quality Processes into their SDLC

#86 / Poster Board

Academic Title

To Investigate How Indian IT Companies Incorporate Quality Processes into their SDLC

by Nancy Raju

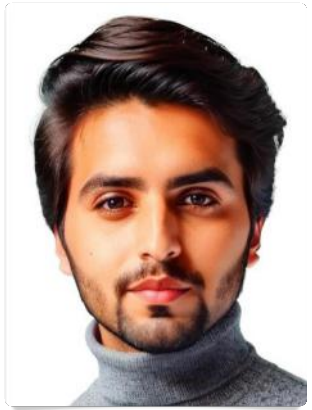
Project Areas

- CI/CD & Testing
- Work Based Project

Project Supervisor
Fiona Lynch

Technologies: Google Forms, Survey

https://bit.ly/4dLGC43



Beyond Robo-bankers: AI Takes Over

#87 / Poster Board

Academic Title

The Impact of AI on Digital Banking

Project Areas

- Automotive and Automation

Project Supervisor

Brenda O'Neill

by Malik Hashim Raza

AI is rapidly transforming the banking landscape, impacting everything from strategy and processes to the customer experience. Machine learning, a key AI technology, empowers banks to analyze vast data sets, predict consumer behavior, personalize services, and refine credit scoring. This unlocks tremendous opportunities for growth, improved risk management, and enhanced customer satisfaction. Alongside these benefits lie concerns about the potential impact on human roles, ethical considerations around transparency and fairness, and the need for robust data privacy and security measures.

Technologies: Artificial Intelligence

https://malikhashimraza.blogspot.com/2024/02/the-impact-of-ai-on-digital-banking.html

Process Orchestration in IoT Ecosystem

#88 / Poster Board

Academic Title

IoT Streamline: Orchestrating Efficiency for Scalable IoT Systems

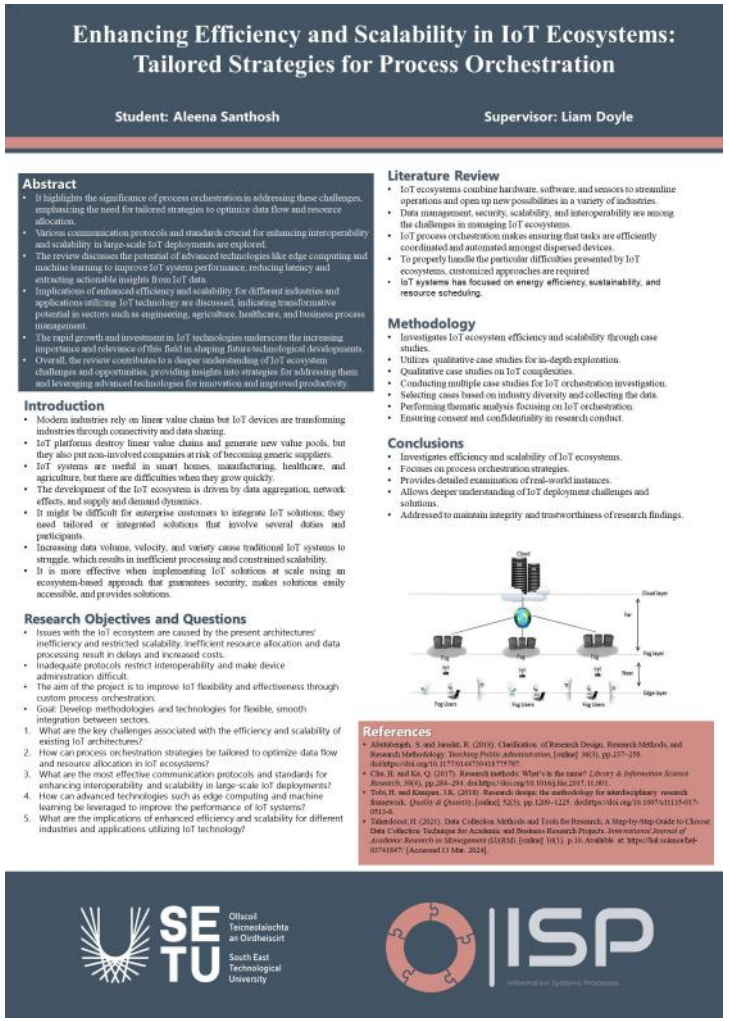
by Aleena Santhosh

Project Areas

- Internet of Things

Project Supervisor

Liam Doyle



Technologies: Survey

https://github.com/Aleenasanthosh998/IoT.git

Blockchain in SCM of E-Waste

#89 / Poster Board

Academic Title

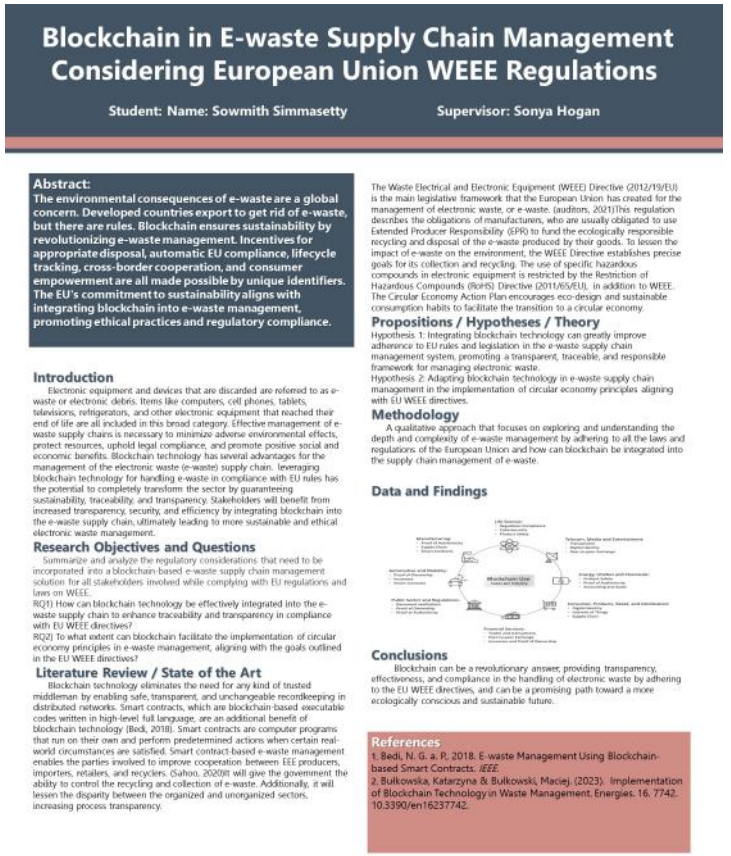
Blockchain in E-waste Supply Chain Management-considering European Union WEEE Regulations

by Sowmith Simmasetty

Project Areas

- Database and Analytics
- Information Systems and Modelling

Project Supervisor
Sonya Hogan



The environmental consequences of e-waste are a global concern. Developed countries export to get rid of things, but there are rules. Blockchain ensures sustainability by revolutionizing e-waste management. Incentives for appropriate disposal, automatic EU compliance, lifecycle tracking, cross-border cooperation, and consumer empowerment are all made possible by unique identifiers. The EU's commitment to sustainability aligns with integrating blockchain into e-waste management, promoting ethical practices and regulatory compliance

Technologies: Blockchain Technology

https://sowmith7700.github.io/sowmithsimmasettydissertation/

3D Printing & CNC: The Future of

#90 / Poster Board

Academic Title

Quality Improvement of Customized Vehicle Fabrication Using 3D Printers and CNC Machines

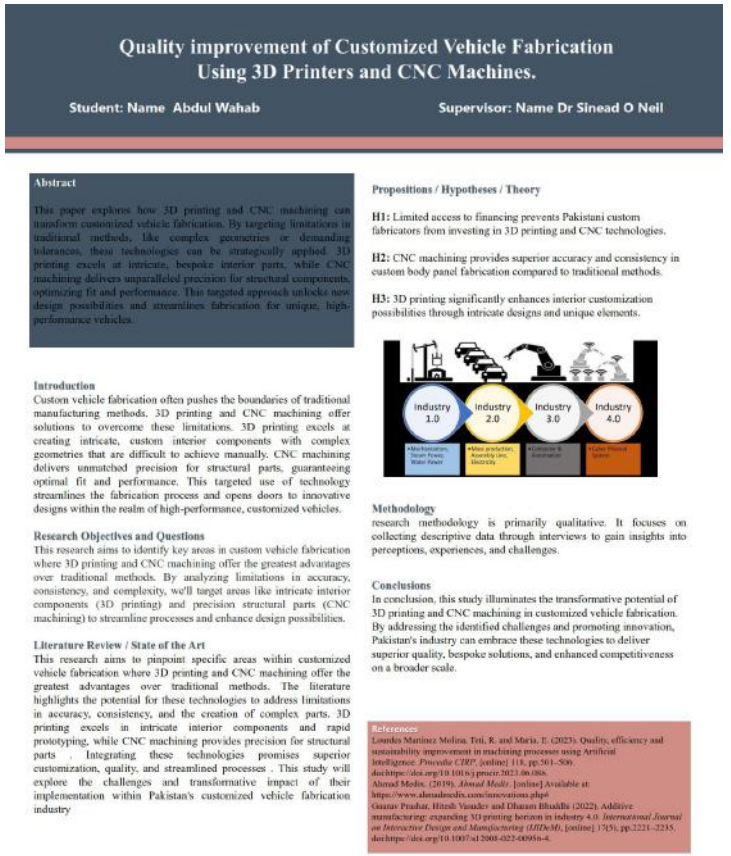
by Abdul Wahab

Project Areas

- Artificial Intelligence
- Automotive and Automation

Project Supervisor

Sinead O'Neill



This dissertation examines how the integration of 3D printing and CNC machining technologies drives advancements in custom vehicle fabrication like luxrious vehicle , ambulance, fire truck , rescue vehicle , It explores increased precision, design flexibility, and potential for improved production efficiency compared to traditional methods. The research offers insights valuable to automotive customization businesses and manufacturing professionals also we can implement same for many other manufacturing and fabrication industry to achieve high quality.

Technologies: 3d Printer, Quality Managemennt, CNC

https://github.com/wahab137966/Dissertation

Cloud Storage in Small Healthcare Clinic

#91 / Poster Board

Academic Title

Assessing the Determinants of Cloud Storage Adoption for Data Management in Chinese Small Clinics

by Zijian Wang

Project Areas

- Cloud Computing
- Software Development: (Front End)

Project Supervisor
Richie Lyng

This project delves into the pivotal role of cloud storage in enhancing data management within small healthcare clinics in China. It scrutinizes the key factors influencing the adoption of cloud storage technologies, focusing on the unique challenges and prospects encountered by these entities. Through a comprehensive analysis, the study aims to offer valuable insights into optimizing healthcare data management practices, thereby improving the quality and accessibility of care in a rapidly evolving digital landscape.

Technologies: Secondary Data Analysis approach

https://github.com/Ash10198/cloud-storage-adoption-small-healthcare-clinics

Safeguarding Supply Chains Cybersecurity

#92 / Poster Board

Academic Title

Cyber-security in Smart Logistics Network

by Tamunoiboroma Abiye Whyte

Project Areas

- Artificial Intelligence
- Database and Analytics
- Internet of Things
- Work Based Project

Project Supervisor
Liam Doyle

Smart logistics uses advanced tech to optimize operations like transportation and warehousing. The Fourth Industrial Revolution brings IoT and real-time analytics to logistics but also increases cybersecurity risks. This research proposes a cybersecurity framework for smart logistics networks. It reviews current cybersecurity knowledge, identifies vulnerabilities, and suggests strategies for threat mitigation. Ethical considerations ensure confidentiality and data integrity, contributing to enhancing logistics security and resilience.

Technologies: Electrical Technology, Computer, The Internet of Things (IoT), Web design

https://tamunoiboromawhyte.blogspot.com/2024/02/project-showcase-part-1.html?m=1

Animation

Artificial Intelligence

Automotive and Automation

CI/CD & Testing

Cloud Computing

Computer Forensics

Computer Networks

Computer Security

Database and Analytics

DevOps

Digital Graphic Design

Game Development

Information Systems and Modelling

Internet of Things

Machine Learning

Media Development and Production

Open Source

Personal Independent Project

Software Development: Back End

Software Development: Core

Software Development: Front End

Software Development: Mobile Hybrid

Software Development: Mobile Native

Software Development: Web

Work Based Project