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# IXN Project Abstracts

**The following abstracts outline the projects carried out by second year undergraduate and MSc Computer Science students during the current academic year.**

## **Centralised information system for Paediatric Trauma patients**

**Authors:** Ethan Fraenkel, Shitong Mi, Nathalie Carmona

**Partners:** Dr. Shabnam Parkar

**Partner Organisation:** NHS

**Technologies Used:** Node Js, Microsoft Azure, HTML, CSS, Javascript, SQL

**Module Code:** 2019-20/COMP0067

**Abstract:** The 4 main trauma unit hospitals in London do not have a way of sharing, aggregating and viewing all the data for the patients across their different hospitals. This is an issue as sharing data among them could increase the efficiency and could help with establishing certain patterns with patients who have specific conditions. To this end, we will be creating a platform with a robust database for these 4 hospitals in order to allow them to better upload/share data among them. Only the 4 lead doctors, and 1 administrator, of those trauma units will be able to add, edit and view data of all the patients across these different trauma units.

**GitHub:** undefined

## **Hear Me Out**

**Authors:** Max Bosch, Jason James, Lucy Rothwell

**Partners:** GOSH

**Partner Organisation:** GOSH / NHS

**Technologies Used:** Azure, JS, HTML, node.js

**Module Code:** 2019-20/COMP0067

**Abstract:** Problem Statement
Child patients in Great Ormond Street Hospital (GOSH) are given a great deal of time and support from the hospital. In the adult healthcare system, this is not always the case. When children move into the adult system at the age of 18, they struggle to navigate it, and a decline in health can be seen.
Solution
A mobile app was built in Ionic using Angular and Typescript, which allows patients to store and track their appointments, find the location of their appointments, take notes in meetings, upload medical records and search for services they need. Patients can also access a “News” section of the app, where they can be kept up to date with the latest information relevant to their condition. A website content management system (CMS) was also created for clinical staff. This allows staff to upload articles into the “News” section of the mobile app.

**GitHub:** undefined

## **Craniofacial App**

**Authors:** Andy Brinkmeyer, Yasmin Abedin, Siobhan Hughes

**Partners:** Gemma Molyneux

**Partner Organisation:** GOSH DRIVE / NHS

**Technologies Used:** Angular, Django, Azure

**Module Code:** 2019-20/COMP0067

**Abstract:** Some children are born with misshapen heads, so called craniofacial conditions. While in some cases the issue improves after delivery, other need professional treatment. But since those defects can be rare, GPs are having difficulties identifying them resulting in long referral times.
To improve the referral process to specialist at Great Ormond Street Hospital, it was proposed to develop a web application that helps GPs to collect and share relevant data with the specialists.
When the GP suspects a craniofacial condition, he issues a questionnaire to the children's guardian via the web app. The collected data can then be used by the specialists to ask for additional information or to better prepare for the first consultation.

**GitHub:** undefined

## **Innovation Feed**

**Authors:** Harry Bullough, Emmanuel Deji Igandan, Guangpeng Zhang

**Partners:** Gemma Molyneux, Nina Oakes

**Partner Organisation:** GOSH DRIVE / NHS

**Technologies Used:** Bootstrap, MySQL, HTML, CSS, Javascript, Node.js, Express.js, Azure

**Module Code:** 2019-20/COMP0067

**Abstract:** The Great Ormond Street Children’s charity has recently set up an innovative team to drive the development of new products. A key part of the innovative strategy is empowering staff to come up with new ideas and pilot them. The goal of our project was to build a responsive web application to aid the proliferation of innovative ideas. Our solution is a website that allows staff to post their ideas as well as vote on ideas from staff at the hospital and charity. Each user has a dashboard that displays a list of suggested ideas generated using an algorithm based on their previous likes. Users are able to search the website for ideas matching specific keywords or ideas tagged as hospital innovation, process improvement or charity fundraising. The application gives users the opportunity to connect with colleagues who share similar innovative ideas.

**GitHub:** undefined

## **Uveitis Passport**

**Authors:** Mobin Sediqi, Asrath Rahman, Elizaveta Kretova

**Partners:** Dr Lola Solebo, Gemma Molyneux

**Partner Organisation:** GOSH DRIVE / NHS

**Technologies Used:** Ionic, Angular, TypeScript, CSS, HTML, SQLite

**Module Code:** 2019-20/COMP0067

**Abstract:** This mobile app is aimed at helping children with uveitis, which is a group of chronic, relapsing remitting, potentially blinding inflammatory eye disorders. Care for children with uveitis is multi-centre and multi-disciplinary. Their key care team may be located in a geographically distant location, acting as an obstacle to informing teams at local hospitals when children present acutely with problems associated with their eye disease / systemic disease / complications from therapy. It can be a challenge to educate young people about their childhood onset disease, and this mobile app supports children and their parents to manage their treatments, eye history, medical team and general health.

**GitHub:** undefined

## **TA Hours Management System**

**Authors:** Yifan Lou, Wenqi Su, Maciej Sobieraj

**Partners:** Dr Tobias Ritschel

**Partner Organisation:** undefined

**Technologies Used:** JavaScript, Node.js, Azure

**Module Code:** 2019-20/COMP0067

**Abstract:** The projects aim is to optimise the way Teaching Assistants work hours are managed at UCL. The proposed web application will help the systems administrator allocate Teaching Assistants to various Modules and control the overall TA hour budget. The system shall allow the Administrator and Module Leaders to log in and view the current staff allocation state.

**GitHub:** undefined

## **Periodontal Diagnosis Tool**

**Authors:** Joshua David Pimm, Dantong Tu, Jinxiu Xiao

**Partners:** Dr Federico Moreno & Anastasiya Orishko

**Partner Organisation:** Eastman Dental Institute / NHS

**Technologies Used:** HTML, JS

**Module Code:** 2019-20/COMP0067

**Abstract:** Periodontitis is a common condition affecting an estimated 45% of the UK adult population (Adult Dental Health Survey, 2009). Globally, periodontitis has a significant health, social-economic, and financial burden (Tonetti et al, 2017).
In 2018 a new classification was released by the American Academy of Periodontology and the European Federation of Periodontology. This classification involves many parameters and was implemented in the UK using a simplified staging definition.
The goal of this project is to provide an easy way for dental practitioners & periodontal specialists to obtain accurate diagnoses by creating a web application that will present the practitioner with a series of questions where clinical information can be entered. This questionnaire will present the practitioner with the correct diagnoses for the entered information using the new classification.

**GitHub:** undefined

## **PICU Parent app**

**Authors:** Kamile Sakelyte, Yuexi Fang, Yu Du

**Partners:** Gemma Molyneux

**Partner Organisation:** GOSH DRIVE / NHS

**Technologies Used:** Ionic, Angular, Cordova, Node.js, Azure

**Module Code:** 2019-20/COMP0067

**Abstract:** Children with life threatening illness are admitted to the Paedriatic Intensive Care Unit (PICU) at the Great Ormond Street Hospital for Children (GOSH). During this stressful period, children’ parents and families have a lot of questions. Although the answers can be found directly from the clinical staff, in the PICU paper booklet or on the GOSH website, the clinical staff might not always be available and the paper booklet is difficult to update. Therefore, the aim of the project is to develop a mobile app for parents and families, which contains all the relevant and up-to-date information and ensures wide accessibility. The app will cover such topics as information about PICU and GOSH, visiting hours, machines and drugs used in PICU. The PICU Parent App will have a web-based content management system accessible to the staff at PICU, allowing to update content and add new topics.

**GitHub:** undefined

## **Smile App**

**Authors:** Constantin Ulbrich, Yao-Chen Lin, Alba Saco

**Partners:** Maja Sabalic

**Partner Organisation:** Eastman Dental Institute / NHS

**Technologies Used:** Ionic (HTML, CSS, Typescript), Azure, PHP, MySQL

**Module Code:** 2019-20/COMP0067

**Abstract:** Smile App is a dental health app with the purpose of educating its users. It contains both text and video content for each educational chapter to appeal to various learning styles of its users. These educational chapters are broken into different dental health area topic categories, such as ‘braces’ or ‘gingivitis’. Each chapter also has a quiz that users can complete to test themselves on their knowledge and view their score. It also features a toothbrush timer that users can click on to set a 2-minute timer for brushing their teeth, and it provides instructions while doing so. There is a separate admin web interface so that educational content can be uploaded or removed from the app freely by the client. It also provides the feature of viewing general app usage statistics, and can add new admin accounts.

**GitHub:** https://github.com/UCLYunFu/COMP0067\_2020\_Team14

## **ANCSSC Knowledge Sharing Platform**

**Authors:** Peter Doane, Chun Yen Wu, Pavel Korolev

**Partners:** Dr Husna Ahmad, OBE

**Partner Organisation:** ANCSSC

**Technologies Used:** HTML, CSS, JavaScript, jQuery, Bootstrap, PHP, MySQL

**Module Code:** 2019-20/COMP0067

**Abstract:** The ANCSSCknowledge sharing platform is designed to become a centralized application for the cooperation of NGOs under the ANCSSC. NGOs will be able to browse through multiple sectors under each of the 17 SDGs, and learn how other NGOs have tackled certain problems through their ‘projects’. NGOs will be able to upload their ‘projects’ - a description of how an NGO has solved a problem in that sector – for other NGOs to learn from, and engage in discussions of their solutions using the discussion forum. NGOs will also be able to search for certain projects or sectors to learn if another NGO has already solved a similar problem. In addition, the ANCSSC can use this application as a centralized platform to post announcements and communicate with specific NGOsunder their association.

**GitHub:** undefined

## **IXN Projects Management System**

**Authors:** Sum Ching Chung, Zeyu Shi, Chengbin Zhang

**Partners:** Dr Yun Fu

**Partner Organisation:** UCL Department of Computer Science

**Technologies Used:** HTML, CSS, JavaScript, BootStrap, Node.js, Express.js, MySQL

**Module Code:** 2019-20/COMP0067

**Abstract:** The Industry Exchange Network (IXN) in the UCL Computer Science Department provides opportunities for students to work on real-world projects for industry partners and clients. The project aims to smoothen this process by developing a web-based platform where external clients can submit proposals and view the projects as it progresses, project coordinators can accept or decline proposals and assign students to work on the projects, and administrators can issue contracts and manage user accounts.

**GitHub:** undefined

## **IXN Website**

**Authors:** Nicholas John Heath, Abdel Mahmoud, Ahmad Reshad Islamzadeh

**Partners:** Dr. Dean Mohamedally

**Partner Organisation:** UCL Department of Computer Science

**Technologies Used:** HTML, CSS, JavaScript, Bootstrap, WordPress, PHP, MySQL

**Module Code:** 2019-20/COMP0067

**Abstract:** The aim of the project is to build a new IXN website, which allows university professors to batch upload new IXN projects and easily add events. Visitors can browse through real-world projects, programme news and events, IXN partners and companies, universities, IXN programmes and the programme’s National Framework Documentation.

**GitHub:** undefined

## **NeoBaby**

**Authors:** Richard Glass, Zechi Gan, Maria Victoria Rosello Petit

**Partners:** Fauzia Paize

**Partner Organisation:** Liverpool Women's Neonatal unit / NHS

**Technologies Used:** Ionic, Node.js, Express.js, MySQL

**Module Code:** 2019-20/COMP0067

**Abstract:** LiverpoolWomen’s is a recognised centre of excellence for neonatal care. Its neonatal
unit provides care for more than 1,000 babies and their families every year. Parents arriving at the neonatal unit feel very overwhelmed and have many questions. NeoBaby provides a solution in the form of a mobile application, which not only provides the necessary information about the hospital and neonatal care, but also enables parents to track and log baby activities such as growth, feeding and milk expression. These activities can then later be viewed and growth metrics are displayed graphically. The application also gives parents the opportunity to anonymously submit feedback about their experience at the neonatal unit.

**GitHub:** undefined

## **Percuro**

**Authors:** Omar Diab, Oliver Dean, Elijah Deas

**Partners:** Alan Fish and Kathie Wong

**Partner Organisation:** Apperta, Epsom and St Helier University Hospitals / NHS

**Technologies Used:** Ionic, React, Node.js, MongoDB

**Module Code:** 2019-20/COMP0067

**Abstract:** Prostate cancer is a growing problem as now 1 in 8 British men will suffer from the disease at some point in their lives. Currently, no holistic digital source of information regarding the disease, treatment and support channels is available to patients. Patients also experience a great amount of administrative difficulty when moving through the pathway with large inflows of paperwork. The project goal is to develop an application that will act as a single educational resource for prostate cancer patients as well as central management tool for their fight against prostate cancer.

**GitHub:** undefined

## **Interactive Maths & Exercise App**

**Authors:** James Haworth Wheatman, Yourong Ye, Jack Fraser-Nash

**Partners:** Estibaliz Fraca Santamaria, Gavin Mair

**Partner Organisation:** Numberfit

**Technologies Used:** Ionic, Node.js, Express.js, MongoDB

**Module Code:** 2019-20/COMP0067

**Abstract:** Currently, children only have access to the Numberfit programme inside a classroom environment. Numberfit aims to extend the availability of practice and engagement with the Numberfit Numberleague programme to the home environment. We develop a cross-platform mobile app that includes both single and multiplayer game modes reflective of the Numberfit experience. The app not only includes exercise videos to supplement the company’s goal, leaderboards and progress tracking capabilities but also provide deeper insight into user performance. An environment of competition is cultivated throughout using the elements above and badges and accomplishments for users to acquire by playing games.

**GitHub:** undefined

## **Early Years App**

**Authors:** Lukas Ruckensteiner-Geyer, Iancu Alexandru-Marian, Zijun Pei

**Partners:** Estibaliz Fraca Santamaria, Gavin Mair

**Partner Organisation:** Numberfit

**Technologies Used:** Ionic, Node.js, Express.js, MongoDB

**Module Code:** 2019-20/COMP0067

**Abstract:** The Early Years app is a project in collaboration with Numberfit, an award-winning Social
enterprise that provides a platform to support children’s education from nursery to university. The Early Years app focuses on the Numbertots product, where children from nurseries can play games on top of a floormat. Due to internet connectivity constraints, and the shift in direction to target parents, Numberfit requires a mobile application to deliver the supporting material for the mat. Using the Ionic framework and the MEAN stack, a cross-platform mobile application deployed on AWS has been developed. The application is complemented with a Numberfit facilitator portal, that allows administrators to modify the content of the app. The final products establish a framework to show educational content and can handle the changing goals of a dynamic start-up. It allows non-programmers to tailor the content without writing a single line of code.

**GitHub:** undefined

## **My Eyes**

**Authors:** Simon Kanani, James Malkin, Minu Filip Choi

**Partners:** Jugnoo Rahi

**Partner Organisation:** GOSH DRIVE / NHS

**Technologies Used:** Ionic, Django, MySQL

**Module Code:** 2019-20/COMP0067

**Abstract:** GOSH DRIVE has developed two age-specific, self-report questionnaires which are currently used by clinicians in routine clinical practice and research relating to visually impaired children and teenagers. Currently, these instruments are completed with pen and paper whilst the patients are at the clinic which can take up to 20 minutes for each patient to complete. Data collection and meaningful analysis are therefore costly and time-consuming. The goal of this project is to develop a fully accessible mobile application that allows patients to complete these questionnaires away from the clinic as independently as possible, thus reducing the burden on clinicians of completing the surveys.

**GitHub:** undefined

## **CS Labs traffic light app**

**Authors:** Ruoqin Tang, Natalia Del Mar Lapeyre, Xingyu Han

**Partners:** Dr Yun Fu

**Partner Organisation:** UCL Department of Computer Science

**Technologies Used:** React Native, Node.js, Express.js, MySQL

**Module Code:** 2019-20/COMP0067

**Abstract:** The project goal is to design and implement a traffic light feedback system. The system includes a mobile app and a web app. The mobile app enables the teaching assistants to submit feedback of their supervised teams and enables the module organiser to see the performance of all the groups and students. The web app is to function as a data input, where the module organiser can add the data of students, teaching assistants, projects, and team assignment to the system.

**GitHub:** undefined



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