Proposed Project Topics for COMP9323 2020T2

During this term proposed projects will focus on supporting people, communities, businesses and stakeholders during the COVID-19 crisis and beyond. Projects will involve developing and demonstrating software as a service (i.e., messaging bot and/or Web/mobile app) and preferably integrating the developed services into platforms that people use to perform work, learning and teaching processes (e.g., teams, slack, WhatsApp, and other).

Project 1 – Student Peer, Mentor and Professional Network

Students are already extensively using social media and messaging services in their personal, learning and professional processes. Using these tools and advances in other technologies such as AI and crowdsourcing, students can enhance their learning and professional experiences through trusted and relevant connection building services (e.g., online Q&A, peer and career support). However, existing solutions are often used in an ad-hoc manner with little or no customisable support tailored to student needs.

The goal of this project is to develop an online software service to support students and stakeholders (e.g., peers, mentors, organisations) in establishing learning and professional connections and opportunities (e.g., finding potential project teammates, finding mentors, finding internship opportunities). In time, the proposed online service may allow students to develop a network of with peers, mentors and stakeholder communities – cooperating to develop knowledge and services that address student networking and collaboration challenges. The proposed service should facilitate among other, personalised peer, mentoring and professional connections (e.g., finding peer to work together on a project, finding a mentor to be involved in an open source project, finding an internship in an organisation). The service should support (not limited to): (i) student, mentor, project and organisation **video introductions and online profil**es, (ii) academic **connection Q&A** services (e.g., seeking connections, help making connections), (iii) **video meetings** among students, peers, mentors and professionals, etc.

Project 2 – Project-based Learning Dojo

Project-based learning (e.g., programming projects, design projects, capstone projects) is common in education. This includes promoting students' interaction with "real-life" projects and professional communities through support tools (e.g., questions and answers platforms such as Stack Overflow programming community, open source projects involving professionals and volunteers). In general, students rely on instructors, peers and mentors for feedbacks on their learning projects. While there is plethora of tools (e.g., task management and collaboration platforms like Trello, Asana, Jira and other) to support learners with task management, these tools are not designed with student projects in mind. Especially in a situation where remote work is a reality and brings its own challenges, it is important to provide appropriate support for project-based learning given that project members are used to frequent face to face meetings to handle project matters.

This project focuses on providing features that are specific to students-mentor meetings, student meetings, project activity review and planning (not limited to) : (i) managing regular project member meetings including **explicit meeting agenda and moderation**, (ii) management of project **goals, milestones and progress**, (iii) providing mee**ting summary**

notes including **to do** tasks and integration with calendar and task management services, (iii) managing regular reviews and feedbacks by mentors, partners and peers forming a project community, (iv) providing regular **encouragement of group members for progress, contributions and positive attitude**, (v) showcasing student progress through **video presentations,** (vi) organizing **scheduled consultations.**

Project 3 – Common Remote Learning and Teaching Services Foundry

Learning activities include lectures, tutorials, labs, collaborations, meetings, assessments and other. While there is plethora of tools (e.g., video, document, assessment services) to support learners, instructors and other stakeholders, new challenges arise due to remote working. Learners and instructors need support to find appropriate tools and learn how to use them for specific purposes. These tools should be relevant and compliant with learning activities and environments. This project aim is to enable learners and instructors to exploit advantages of available technology and practices and keep up with remote work challenges and online tool opportunities.

The objective is to provide learners and instructors with an online service focused on accessing high quality curated resources focused on remote learning tools (e.g., best practices, short tutorials, experiences sharing). More specifically, the project focuses on providing features that allow learners and teachers community to share information related to remote learning tools (not limited to: (i) **curate questions and answers** relevant to online services for teaching services (ii) **curate short video tutorials and** guides on using online services for teaching and learning, (iii) **discussion and experience sharing** form, (iii) **curate best practices** on using online teaching and learning services, based on experiences from learner and teacher communities.

Project 4 – Student Wellbeing and Rights Online Service

Universities, organisations and various other groups are all voicing emerging challenges in protecting the health, wellbeing and rights of vulnerable populations (e.g., people are losing their jobs, have difficulties to cope with stress, remote work and other situations). While organisations provide services such as counselling and online information, existing solutions are often used in an ad-hoc manner with little or no customisable support tailored to student and staff concerns. The goal of this project is to provide an online and unified service that leverages conversational technologies and information curation to help universities to support students during crisis such as COVID-19 and beyond.

Messaging bots provide interaction techniques that may lead to good user experiences and bring down accessibility barriers. Users can express, e.g., in natural language, their difficulties and concerns and interact with conversational services (e.g., wellbeing messaging bots) to refine their requests, get answers to their questions, learn through short and conversational guides and training materials. In time, the service may develop into a network of volunteer information curators and illustrators to organise student concern topics, questions and guides into searchable and conversational digital assistants. The service should provide (not limited to): (i) **Q&A to address student concerns**, (ii) **links to professionals and experts** on concern matters, (iii) **short videos and guides** to provide help, (iv) **curate up-to-date health, wellbeing and right information** from universities, governments, and associated organisations.

Project 5 – Health and Safety Online Service

Universities, organisations and various other groups are facing increased challenges to handle Health and Safety (H&S) concerns, e.g., in relation to preparation of workplace and protection of students and staff during COVID-19 crisis and beyond. Similar to project 4, while organisations provide H&S information and training, existing solutions focus on normal situations. The goal of this project is to combine crowdsourced information curation and conversational digital assistants to develop an online service that provides health and safety support to students and staff.

The service should provide (not limited to): (i) **links to professionals and experts on H&S** matters, (ii) **curation of short videos and training guide**s to provide H&S support, (iii) curation of **relevant and trusted H&S questions and answers.**

Project 6: The Cataloguing Interface

This project will help charity op-shops to build an online catalogue.

Charity op-shops have long been selling second-hand goods to raise funds for their respective charities. But like most physical stores, charity op-shops have struggled to operate and fundraise in the COVID19 times, due to social distancing and lockdowns.

As such, charity op-shops are wanting to digitalise. And they would like your help with building a cataloguing solution for listing all the unique books and clothes that are donated to their stores.

In addition to building a React Native cross-platform mobile interface, this project would involve:

- The creation of a cloud-based relational database for managing listing & user access;
- Ecommerce Integration to list items on eBay, Amazon and beyond for greater market exposure;
- Improvement of the book cataloguing efficiency by auto-generating the book details. This could be done via barcode (ISBN) scanning & integration with various book APIs.

Possible extension tasks include creating an offline mode to queue listing and deleting requests, creation of the web-store front, and integration with a delivery logistic management system.

By picking this project, students will also help op-shops to reduce society's waste creation and promote sustainable consumption. Specifically, an online catalogue will help connect these second-hand books and clothes to new homes, where they would have otherwise been sent to the landfill.

Students will be working directly with charity op-shops and CircEx Enactus for this project. If the students are successful in creating the cataloguing interface software, it will be deployed in the real-world to support the op-shops and their respective charities.

Note: Project 6 is proposed by CircEx Enactus (https://enactusunsw.org/). The CircEx team (see video) has so far built an Android Cataloging interface MVP with direct integration on the eBay platform. The CircEx team will provide guidance during this project.'