

Student Research Opportunities -- Centre for Mobile Innovation (CMI) Research Projects

Part-time Position
Job Title: Machine Learning Data Analyst; Computer Vision
Industry Partner: ResTech Global Key Role: co-mentorship
Principle Investigator: Prof. Ghassem Tofighi Area of expertise: Computer Vision, Machine Learning
HQP: key skills sets: Machine Learning; Data Analysis, Mobile Development
Project Summary:
<p>In this research project “Tracking and organizing medication information using machine learning”, we will build a virtual assistant as a mobile application, called Therapy Tracker, which will allow smartphone users to detect prescription information on medicine bottles or other containers as well as schedule and track prescriptions to improve the quality of independent living.</p> <p>The proposed application offers a solution to build such a system that can track and alert users especially elderly about their medications by simply scanning their medication prescription using the smartphone’s camera. The application will detect and capture prescription information and provide automated assistance in scheduling, reminders and tracking medications by keeping a list of medications, dosages, refill information, and prescribing documents. Augmented Reality (AR) technologies will be used to provide virtual information that combines real world situations, with virtual information, such as detecting and highlighting the correct medication from a group of them. The virtual assistant will also guide the user through both visual and auditory alerts. The proposed research will be conducted in collaboration with ResTech Global, a company focused on building cutting edge healthcare solutions.</p> <p>Time and Schedule:</p> <ul style="list-style-type: none"> <input type="checkbox"/> 13 hours / Week <input type="checkbox"/> 60% - 70% - Face-2-Face Teamwork (remote work due to COVID) <p>Dates:</p> <ul style="list-style-type: none"> <input type="checkbox"/> January 18, 2021 to April 23, 2021 (excludes reading week) <p>Remuneration:</p> <ul style="list-style-type: none"> <input type="checkbox"/> \$16.5 - \$20.55 / hour depending on experience and qualifications. <p>Technologies:</p> <ul style="list-style-type: none"> <input type="checkbox"/> Flutter, iOS and Android Native development <input type="checkbox"/> Google Cloud Platform <input type="checkbox"/> Google Firebase <input type="checkbox"/> Google Vision API <input type="checkbox"/> Python and TensorFlow <input type="checkbox"/> Augmented Reality <input type="checkbox"/> Deep Learning

Responsibilities:

- Research emerging technologies, frameworks and techniques relevant to the research project
- Research and review literature as required by the research project
- Research 3rd party components that can be reused in the project
- Software development, software design, modeling and requirements analysis
- Test, debug and troubleshoot software applications developed for the research project
- Estimate and plan tasks that meet agreed upon deadlines
- Participate in team-meetings, prepare, participate in presentation meetings and communicate with industry partners under the supervision of the PI
- Work Face-2-Face with the team for the majority of the time dedicated to the project

Job Requirements (Required):

- Demonstrable experience developing with Google Cloud Platform such as Firebase and Google Vision API
- Demonstrable experience developing universal applications capable on working on multiple device types (e.g. mobile, tablets and large-screen devices) using React Native, iOS App Development using Swift, Android App Development.
- Demonstrable mobile app development on Android and iOS platform (Flutter Preferred)
- Demonstrable knowledge of professional development practices, best-practices, using debugging techniques, unit-testing and software version control.
- Experience in designing and/or analyzing design visualized using UML
- Interest in developing healthcare mobile software systems
- Can-do attitude, resourceful, demonstrates initiative, creativity and passion for purposeful, result-oriented research
- Minimum 1 year academic experience in the Mobile Computing Degree program or 2 years and relevant COOP experience in a related diploma program.

Job Requirements (Beneficial / Good to have assets):

- Experience developing with Flutter
- Experience developing native applications
- Experience in software modeling using Visual Paradigm
- Experience in communication using team tools such as MS Teams
- Experience in project planning and management using agile management tools such as Asana, MS Teams, BitBucket, Github, Jira, etc.
- Interest and experience in UI design, graphics and digital media design

NOTE:

This position is funded through the Work Study program only. Job offers will be made subject to the student's approval for Work Study. Please review the eligibility criteria for Work Study to see if you will be eligible. Unfortunately, international students are not eligible for Work Study funding, but can still apply to this job. You can find information on Work Study here:

<https://www.sheridancollege.ca/admissions/financial-aid-and-awards/work-study-assistance.aspx>