Sheridan | Centre for Mobile Innovation

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

Part-time Position
Job Title: Mobile Application Developer
Industry Partner: Inovex and Osteoporosis Canada **Key Role:** co-mentorship
Principle Investigator: Dr. Volodymyr Voytenko **Area of expertise:** data science, medical data analsis, software development,
HQP: key skills sets: Data Science; Mobile Healthcare Software Developer
Project Summary:
Towards better understanding of risk of osteoporotic fractures: **Using data science and machine learning to produce new knowledge and provide predictive insights** inovex   OSTEOPOROSIS CANADA   Sheridan | Centre for Mobile Innovation   **Overview and Context** Inovex (https://inovex.ca/about-us/) is a digital transformation partner of choice for leading enterprises and SMEs. Inovex helps businesses skillfully build technology and custom software solutions to drive innovation and operational efficiency. Inovex is constantly reimagining digital innovation to deliver state-of-the-art and skilfully engineered cloud, web, mobile and IoT solutions. These allow us to accelerate the modernization, integration and optimization of operations for our clients across industries. Our aim is to create simple and meaningful solutions that leverage data science to drive insights and empower companies to achieve their business goals. One of Inovex's partners is Osteoporosis Canada and has been working with them for over a decade. Osteoporosis is a disease characterized by low bone mass and deterioration of bone tissue, which can lead to increased risk of fracture. Known as the "silent thief," bone deterioration can occur over a number of years without presenting any symptoms. The most common fractures associated with osteoporosis are in the hip, spine, wrist, and shoulder. Risk of osteoporotic fractures can be reduced through a systemic case finding approach. One such approach is through the Fracture Screening and Prevention Program (FSPP) which has been operational in Ontario from 2007. Inovex has been instrumental in providing a database solution as well as ongoing support for this program. In this collaborative research project involving Inovex, Osteoporosis Canada and Sheridan's Centre for Mobile Innovation (CMI), we will explore and analyze FSPP data through data science and machine learning (ML) techniques. The goal is to better understand the characteristics and interrelationships between patient self-reported data collected through this program to determine whether the variables can help predict comparative risk between patients enrolled in the program. Furthermore, the research activities will also include determining the predictors with insights that may lead to better prevention strategies. These findings may serve to improve the successful Fracture Screening and Prevention Program (FSPP) offered by Ontario Osteoporosis Strategy.

Time and Schedule:
- 10 - 13 h / Week
- 60% - 70% - Face-2-Face Teamwork (remote work due to COVID)

Dates:
- January 11, 2020 to April 23, 2020 (excludes reading week)

Remuneration:
- $18 - $22 / hour depending on experience and qualifications.

Technologies:
- Python
- Python Scikit-learn
- Tensor Flow
- MATLAB (Machine Learning Toolbox, etc.)
- Java, Kotlin for Android App Development
- iOS
- React Native

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 most of the time dedicated to the project

Job Requirements (Required):
- Demonstrable experience developing universal applications capable on working on multiple device types (e.g. mobile, tablets and large-screen devices) using React Native
- Demonstrable mobile app development on Android and iOS platform
- 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 native applications
- Multi-threaded programing experience
- Experience in software modeling using Visual Paradigm
- Experience in communication using team tools such as Slack
- Experience in project planning and management using agile management tools such as Trello, 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