Yue Ma

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RESEARCH INTEREST

• Machine Learning • Artificial Intelligence • Computer Vision • Software Development •

EDUCATION

B. Sc., Computer Engineering (GPA: 3.8/4.0)   **Sep. 2014 – Jun. 2019 (Expected)**
University of Alberta, Edmonton, Canada

COMPUTER RELATED SKILLS

- Python, JavaScript, Java, C, C++, SQLite, HTML, CSS, VHDL, MATLAB, Assembly Language
- Web development and Android applications development
- Database management, including MySQL, PostgreSQL, and Vertica
- Machine learning, object-oriented software design, operating system concepts, user interface design, parallel programming, embedded system

PROFESSIONAL EXPERIENCE

Researcher & Developer, Shaw Communications   **Jan. 2017 – Dec. 2017**
Proactive Network Maintenance (PNM)
- Developed a cable field fault detection application based on CableLabs' PNM technique which was adopted for company-wide use after presentation to Vice President and Director
- Optimized the signal clustering method for PNM using DBSCAN (density-based spatial clustering of applications with noise) algorithm instead of the origin energy comparison method
- Simulated the PNM application under real world conditions and it was able to detect 35% (previously 8%) cable issues before the users were impacted
- Conducted hands-on physical experiments to analyze cable plants' issues
- Wrote technical documentation for PNM application

Research Student, University of Alberta, Electrical and Computer Engineering   **Sep. 2016 – Dec. 2016**
House Price Analysis and Prediction
- Utilized LASSO linear regression method to analyze the Edmonton's house prices
- Predicted the house prices with precision as high as 90% compared to market data
- Awarded the Dean's Research Award

Research Student, University of Alberta, Electrical and Computer Engineering   **May. 2016 – Sep. 2016**
Hierarchical Approach to Data-Driven Change Detection and Diagnosis
- Assisted in the development of an industrial fault detection system on behalf of the Honeywell Company which was implemented immediately
- Conducted literature review about detection and diagnosis algorithms
- Tested the novel fault detection methods using data generated by the Tennessee Eastman model
- Utilized MATLAB to make simulation models (i.e. tank systems)
- Wrote Python scripts for real-time fault detection algorithms

Software Developer, City of Edmonton   **May. 2018 – Dec. 2018**
- Achieved ten times process speed improvement by designing and developing a Flow Clustering Tool web application that involved multi-threading method to conduct weighted K-means algorithm on large dataset
- Developed six various data visualization applications for transportation and land use analysis
- Implemented a QGIS Python plugin tool for splitting an irregular polygon into equal pieces

- Collaborated with HBA consultants to optimize the entire provincial land use simulation process which resulted in better land approval and management
- Managed geometry data on PostgreSQL server

Programming Projects   **May. 2016 – Sep. 2018**
- Led a team of six to develop Blue Flash, an Android application for fast food delivery
- Developed Compare Accessibility Application to allow city planner to optimize transportation
- Created Find Your Home Application to help people identify suitable places to live
- Built a Travel Zone Dashboard showing future land use for the City of Edmonton
- Demonstrated various machine learning algorithms on Handwritten Digit Recognition (91% precision)
- Developed a client-server chat program utilizing TCP sockets
- Utilized Arduino, LCD, and a joystick to design Threes – a math game, and Gomoku – a Go game

VOLUNTEER EXPERIENCE

DDF Student Service   **Aug. 2015 – May. 2017**
- Led a group of twenty volunteers to welcome newcomers for the University of Alberta welcome event
- Presented Efficient Studying for 150 newcomers at the welcome event
- Organized monthly club events

HONORS & AWARDS

- Dean's Research Award, 2016 – 2017
- The IEEE Northern Canada Section Scholarship, 2016 – 2017
- International Student Scholarship, 2015 – 2016
- Talisman Engineering Undergraduate Scholarship, 2015 – 2016
- University of Alberta Academic Excellence Scholarship, 2014 – 2015
- Faculty of Engineering Academic Excellence Scholarship, 2014 – 2015