Alex Hong

SUMMARY OF QUALIFICATIONS
- Graduate student major in software engineering with excellent research and project experience.
- Strong verbal and written communication skills
- Solid problem-solving skills in troubleshooting software issues.
- Proficient skills in Python, Java, JavaScript, MySQL, knowledge of Bash and Ruby
- Fast learner, hard worker and an excellent initiative team player.

TECHNICAL SKILLS
- **Programming Language:** Python, Java, JavaScript, MySQL, C, Latex, MATLAB, C++
- **Front-end technologies:** JavaScript, HTML, CSS, Bootstrap, React, Node.JS, XML
- **Machine learning, Deep learning, Linux, MongoDB, AWS, Docker.**

WORKING EXPERIENCES
Full Stack Engineer, EduShare, Toronto, Canada   Sep 2020 – Now
- Using MongoDB and Node.JS web server to convert the teachers' input equation to numerical questions. Presenting the question to student accounts and checking their answers.
- Implementing the landing page according to the UI designer using React, JavaScript, CSS and HTML.
- Maintaining the Database using MongoDB and SQL

Software Research Intern, University of Auckland, Auckland, New Zealand   Jul-Sep 2018
- Accomplished the project of Web-based Digital Twins for MTConnect-enable Cyber-Physical Machine Tools in the Laboratory for Industry 4.0 Smart Manufacturing Systems (LISMS) under the supervision of Prof. Xun Xu, associate dean, faculty of engineering (http://www.engineering.auckland.ac.nz/people/xun-xu).
- Achieved the goal of building a web-based virtual machine tool, monitoring the machine tool's status and machining processes through web browsers using JavaScript and HTML, communicating with data source through XML. Using Three.JS, OBJLoder.JS to form the machine tool model and import different part of 3D OBJ model into the webpage.
- Published Conference paper as the second author: Development of Machine Tool Digital Twin and Its Applications, published on the 48th International Conference on Computers and Industrial Engineering (CIE 48) 2-5 Dec 2018

Engineering Intern, Bosch, Hangzhou, China   Oct 2018- Jan 2019
- Conducted daily delivery, checking product backlog and weekly data output using SAP system to ensure the logistic system going smoothly, work out industry solution towards logistic supply chain.
- Carried product quality check under the instruction of the engineer to minimize the failure rate

RELEVANT PROJECTS
Course project for Machine Learning: County-based COVID-19 Cases Number Prediction   May-Aug 2020
- Successfully conducted a 3-member course project proposing a data analyzing model using XgBoost and Neural Network to give a prediction of *COVID*-19 Cases from an American county heath factors dataset using MySQL and Python under the frame of NumPy and Pandas. I was in charge of the parameter tuning and featuring engineering part.

Course project for Software Testing: Enhancement on Banditfuzz by fuzzing SAT solvers   May-Aug 2020
- Implemented extension to the current Banditfuzz (https://github.com/j29scott/BanditFuzz_Public) to generate testing cases for SMT solver on real numbers and integers. Carrying comparison on the running time on Z3 and CVC4 solvers on different benchmarks using Python. I was in charge of the extension on the case generator.

EDUCATION BACKGROUND
Master of Engineering in Systems Design Engineering   Sep 2019-Dec 2020
University of Waterloo, Waterloo, ON, Canada
Course: Algorithm Design and Analysis, Machine Control and Process, Pattern Recognition, Software Testing/Quality Assurance and Maintain, Workshop – Artificial Intelligence and Machine Learning

Bachelor of Engineering in Ocean Engineering   Sep 2015- Jul 2019
Zhejiang University, Hangzhou, China
Courses: Fundamentals of Computer Science, Calculus, Ordinary Differential Equations, Electronics, C Programming, University Physics (A) I, II, Ship Electrical and Communication, Ship Vibration, Fluid Dynamic

University of Gothenburg, Sweden
Exchange student for one semester. Course: Differential Geometry   Jan – Jun 2017

PRIZES & HONORS:
- Third-Class Scholarship for Outstanding Merits in Academic Year 2015/2016   Dec 2016
- Scholarship of Northern Hemisphere Summer Research Scholarship Program   Jul 2018