JESSICA BO (YI FEI BO)

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SKILLS

Software	Java, C/C++, MATLAB, Python, QNX, Linux, git, AWS, ROS
Research	Statistical analysis, OpenSim, LaTeX, ethics certification
Mechanical	CAD, FEM, machining, design
Electrical	Soldering, oscilloscope, sensors

EDUCATION

University of British Columbia – 2020
B.A.Sc. Mechanical Engineering
Specialization in Biomedical Engineering
Minor in Computer Science (anticipated)

Coursework: Data Structures, Algorithms, 3D Vision, Object-Oriented Programming, Machine Learning

WORK EXPERIENCE

Software Development Engineer Intern | *Amazon* *May – July 2019*
- Created a design document for a backend pipeline that registers Amazon membership events in real-time
- Used AWS cloud computing services like SNS, SQS, and Lambda to guarantee event polling and delivery
- Implemented an event processing web service with business logic in Java for the production environment

R&D Software Developer | *Blackberry QNX* *September – December 2018*
- Programmed in a real-time, embedded environment to support QNX's autonomous driving perception algorithm research, with emphasis on achieving sensor fusion between LiDAR and stereo cameras
- Developed an efficient LiDAR processing algorithm that detects object candidates and free space with C
- Created 2D and 3D LiDAR visualization tools using C and MATLAB for demoing at CES 2019

Research Student | *CERTEC, Design Sciences at Lund University* *May – June 2017*
- Exercised engineering design principles to design and prototype a handheld device for stroke rehabilitation
- Integrated multiple accelerometer sensors with an Arduino to provide users with motion-triggered feedback
- Fabricated a lightweight thermoplastic wearable that achieved high satisfaction in test users

Mechanical Design Specialist | *Mazdis Inc.* *June – December 2016*
- Generated mechanical and structural designs for automated bicycle parking systems
- Created CAD models of components and applied weight-to-strength optimization using FEM analysis
- Used the waterjet, machine shop, and hand tools to prototype a bike locking mechanism

TECHNICAL PROJECTS

Wheelchair Detection and State Estimation| *CARIS Robotics Lab, UBC* *September 2019 – Present*
- Developing Bachelor's thesis proposal on wheelchair detection (multi-class Adaboost) and dynamic state estimation (Kalman Filter) using 2D range data for mobile robot path planning

H4PTIC Sensory Prosthesis | *Hatching Health 2019* *March 2019 – Present*
- Integrated pressure-sensitive feedback to prosthetics to restore the sense of touch in amputee patients
- Awarded with *Best Technical Innovation* and *2nd Place Overall* with business pitch and design prototype
- Won first place with project presentation at regional *Speak out for Engineering* competition

HoloLens Point Cloud Registration | *ETH Zurich* *February – May 2018*
- Applied the *Iterative Closest Point* and *RANSAC* algorithms to the *Guaranteed Outlier Removal* point cloud registration algorithm using MATLAB to improve efficacy
- Generated point cloud maps using the Microsoft HoloLens and pre-processed the data using PCL
- Conducted alignment error and runtime analysis to quantify changes in performance