JESSICA BO (YI FEI BO)

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EDUCATION

2014 – 2020 **University of British Columbia | *Vancouver, Canada***
BASc Mechanical Engineering
Specialization in Biomedical Engineering

Spring 2018 **ETH Zurich | *Zurich, Switzerland***
Study abroad student in *MASc Health Sciences and Technology*

2012 – 2014 **University Transition Program | *Vancouver, Canada***
Highly competitive and accelerated program for finishing five years of secondary education in two years, granting early entrance to university.

RESEARCH EXPERIENCE

Winter 2019 – present **Mechanical Engineering Bachelor Thesis**
Collaborative Advanced Robotics and Intelligent Systems Laboratory, UBC
Supervisor: Machiel Van der Loos
Developing research proposal for wheelchair detection (multi-class Adaboost) and dynamic state estimation (Kalman Filter) using 2D range data.

Fall 2018 **Autonomous Vehicle Research & Development Student**
Blackberry QNX, Ottawa, Canada
Supervisor: Gordon Bell
Developed a real-time autonomous vehicle perception algorithm for detecting object candidates and free space with Lidar data. Created 2D visualization tools by casting 3D spatial coordinates onto a 2D plane using projective geometry.

Spring 2018 **Volunteer Research Assistant**
Laboratory for Orthopaedic Technology, ETH Zurich
Supervisor: Stephen Ferguson
Assisted in clinical trials and 2D/3D registration of fluoroscopy images in research investigating the hip kinematics of total hip replacement patients.

Summer 2017 **Summer Research Student**
CERTEC, Department of Design Sciences, Lund University
Supervisor: Héctor Caltenco
Designed a thermoplastic-based hand rehabilitation device for stroke survivors as a part of the ActivABLES Nordic research project. Developed a sensor-processing algorithm to interpret hand poses and provide stimulating visual feedback.

Fall 2016 **Data Analyst for Electronic Medical Records Study**
International Children's Advisory Network
Supervisor: Meghan Gwara
Used one-way ANOVA statistical tests to analyze Likert Scale responses on benefits and barriers of electronic medical record (EMR) systems.

CONFERENCE PROCEEDINGS

Gwara, M., Tsang, V. L., Thompson, C. A., Smith, S., **Bo, J**., Fletcher, S., Janusz, N., Chew, S. Y., Janusz, M., Thompson, C. K., Bertrand, M., Woods, H., Thompson, C. (2018). Use of Centralized Electronic Medical Records System in Paediatric Care. *American Academy of Pediatrics 2017, Chicago, Illinois*, 16 – 19 September.

Bo, J., Janusz, N., Tsang, V. (2017). Use of Centralized Electronic Medical Records System in Paediatric Care. *Multidisciplinary Undergraduates Research Conference 2017, UBC, Vancouver, Canada*, 23 – 25 March.

CONFERENCES & EVENTS

2019	**IMechE Speak Out for Engineering**, Vancouver, BC – *Presenter*
2017	**Multidisciplinary Undergraduate Research Conference**, Vancouver, BC – *Poster*
2017	**International Conference on Engineering Design**, Vancouver, BC – *Exhibitor*
2016	**International Paediatrics Association Conference**, Vancouver, BC – *Exhibitor*
2015	**Paediatric Academic Society Conference**, Vancouver, BC – *Exhibitor*
2015 – 2018	**International Children's Advisory Network Summit**, various locations worldwide (Washington DC, Barcelona, Orlando, Edinburgh) – *Organizer*

AWARDS

2019	**Women in Technology Scholarship** ($10,000) – *IKB BC Scholarship Society*
2019	**Speak Out for Engineering** (1st place) – *Institution of Mechanical Engineers UK*
2017	**Coordinated International Experience Award** ($1000) – *UBC Applied Science*
2017	**Go Global Research Abroad Programs Award** ($2000) – *UBC Student Services*
2016	**NSERC Experience Award** ($4500) – *NSERC Canada*
2014 – 2018	**UBC Dean's Honour List** – *UBC Applied Science*
2014	**Chancellor's Scholar Award –** *University of British Columbia*
2014	**Provincial Exam Scholarship** ($1000) – *Government of British Columbia*

SKILLS & CERTIFICATES

Software	Java, C, C++, Python, MATLAB, QNX, Linux, AWS, LaTeX, R, Labview, ROS
Mechanical	SolidWorks, Fusion 360, ANSYS, Machining, Prototyping, Mechanical Design
Electrical	Soldering, Oscilloscope, Instrumentation, Sensors, Arduino, IMU, LiDAR
Research	TCPS2: CORE (Canadian certificate for ethical research involving humans)

INDUSTRY EXPERIENCE

Summer 2020 **Software Engineer Intern (incoming)| Coursera**

Summer 2019 **Software Development Engineer Intern | *Amazon***
Designed and implemented the backend of a Java web service that processes and registers Amazon membership events in real-time, using AWS cloud computing services to guarantee event polling and delivery.

Summer – Fall 2016 **Mechanical Design Specialist | *Mazdis Inc.***
Generated mechanical and structural CAD designs for automated bicycle parking systems, then conducting FEM analysis to optimize the weight-to-strength ratio.

TECHNICAL PROJECTS

Fall 2019 – present
attent.iv Catheter Sensor for IV Infiltrations | *New Venture Design, UBC*
AMS Entrepreneurship Hub RBC Get Seeded Award ($500)
Conducted extensive literature and customer validation to identify the problem of intravenous (IV) infiltration in the neonatal ICU unit. Conceptualized design of catheter with imbedded MEMS impedance sensor for detection infiltration.

Spring 2019 – present
H4PTIC Sensory Prosthesis | *Hatching Health 2019*
UBC Applied Science Best Technical Innovation Award ($1500)
Designed a novel sensory-feedback device for prosthetic users that transforms pressures into vibrotactile feedback, using a validated mechanism that leverages neuroplasticity and somatosensory cortex remapping in amputees.

Spring 2018
HoloLens Point Cloud Registration | *3D Vision, ETH Zurich*
Adapted the Guaranteed Outlier Removal point cloud registration algorithm with Iterative Closest Point algorithm to reduce alignment errors using MATLAB.

Winter 2018
MyoHome | *nwHacks 2018*
Top 30 Wolfram Award
Innovated a gestured-controlled smart home prototype using EMG signals captured by the Myo Armband and the Arduino microcontroller.

2017 – 2018
ENABLE Soft Exoskeleton | *UBC Biomedical Engineering Student Team*
Conducted literature review and interviewed researchers to aid in the engineering design of an EMG-controlled soft upper-limb exoskeleton.

2016 – 2019
FraXure | *UBC Biomedical Engineering Student Team*
ICED17 Design Fair (2nd place), Rice University 360° Global Health Design Competition (Top 20), Medical Device Design Center Excellence Awards (Top 9)
Prototyped a pneumatic femur fracture treatment device for low-resource settings and performed testing to ensure that device meets safety requirements.

Summer 2016
ReCrutch | *Personal Project*
Designed Fusion 360 CAD models of ergonomic crutches optimized for ascending and descending stairs inspired by personal experience with using crutches.

2014 – 2015
Thunderbird CubeSat | *UBC Orbit Satellite Design Team*
Created SolidWorks CAD designs for a weight-saving satellite structural chassis and programmed a 3D simulation of the satellite's orbit using MATLAB.

LEADERSHIP EXPERIENCE

2014 – 2018
Conference Committee Chair | *International Children's Advisory Network*
Chaired regular planning meetings for annual iCAN Summits on patient advocacy. Reviewed European Medicine Agency's pediatrics clinical research policies.

2013 – 2018
Kidscan Youth Advisor & Mentor | *BC Children's Hospital Research Institute*
Advised research teams on promoting youth involvement in pediatrics research, helping research projects gain ethics approval for clinical trials.