

Jessica Yi Fei Bo

📍 Zurich, CH | Vancouver, CA
✉ jessica7bo@gmail.com
🌐 www.linkedin.com/in/jessica-bo/
🌐 <https://jessica-bo.github.io/>

*Researcher, engineer, and designer with multidisciplinary experiences in robotics, software engineering, medical device development, and entrepreneurship. My research interests broadly intersect with **human-centered design** of intelligent systems. Currently, I am working on **perception** and **learning** for robotics.*

EDUCATION

- ETH** **ETH Zurich** | MSc Mechanical Engineering, Robotics concentration Expected 2022
Coursework: Probabilistic Artificial Intelligence, 3D Vision, Information Systems, Human Factors
- UBC** **University of British Columbia** | BSc Mechanical Engineering, Biomedical option May 2020
Thesis: Wheelchair Detection and State Estimation using Laser Scanning Sensors for Mobile Robots
Coursework: Machine Learning, Algorithms, Data Structures, Mechanical Design, Instrumentation

RESEARCH & INDUSTRY EXPERIENCE

- Visual Intelligence and Learning Lab, EPFL** | Supervisor: Prof. Amir Zamir Summer 2021
Research Assistant for Summer@EPFL
 - Incoming research assistant at VILAB for perception for reinforcement learning in robotics
- Diaxxo AG, Functional Materials Lab, ETH Zurich** | Supervisor: Dr. Michele Gregorini Spring 2021
Software Research Assistant (Part-Time "Hilfsassistentin") *Python, matplotlib, NumPy, controls*
 - Developing and managing the Python codebase for a rapid desktop PCR machine under development
- CARIS Robotics Lab, UBC** | Supervisor: Prof. Machiel Van der Loos Fall 2019 – Spring 2020
Robotics Research Assistant *ROS, Python, MATLAB, scikit-learn, TensorFlow, pandas*
 - Proposed a wheelchair state estimation algorithm to improve safety in interactions with mobile robots
 - Used a multi-class neural network to predict wheelchair orientation from 2D laser data with 86% accuracy
- Coursera** | Team: Payments Engineering & B2C Decision Science Summer 2020
Software Engineering Intern *Scala, Python, SQL, REST, statistical analysis*
 - Led the backend consolidation of billing information for 6.5M+ monthly transactions in a RESTful API
 - Analyzed 900+ A/B experiments and causally identified patterns in statistically significant revenue patterns
- Amazon** | Team: Underserved Populations Engineering Summer 2019
Software Development Engineering Intern *Java, Spring, AWS (SNS, SQS, Lambda)*
 - Designed a backend pipeline using AWS services to guarantee real-time event polling and delivery
 - Implemented an event-processing service in Java for 120k+ annual Amazon membership events
- Blackberry QNX (Autonomous Vehicle Innovation Centre)** | Supervisor: Gordon Bell Fall 2018
Autonomous Vehicle Research & Development Co-op Student *C, MATLAB, QNX, LiDAR*
 - Developed a LiDAR processing algorithm that detects road signs and free space with < 10 ms runtime
 - Applied projective geometry to 3D LiDAR point cloud to fuse with 2D camera image for visualization at CES
- CERTEC Group, Lund University** | Supervisor: Dr. Héctor Caltenco Summer 2017
Rehabilitation Engineering Research Assistant *Arduino, sensors, fabrication, user testing*
 - Prototyped a hand spasticity rehabilitation device that provides stimulating motion-triggered feedback
 - Integrated real-time control of a computer keyboard using hand movements with accelerometers and Arduino

CONFERENCE ABSTRACTS

- Bo, J.** (2020). Detection of Wheelchairs Using Laser Scanning Sensors for Mobile Robotics. In *Multidisciplinary Undergraduates Research Conference 2020*. (*Best Oral Presentation*)
- 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. In *American Academy of Pediatrics* 2017.

TECHNICAL PROJECTS

Attentiv Medical | attentivmedical.com

Fall 2019 – Present

Co-Founder and Research Lead

Python, scikit-learn, NumPy, pandas, sensors, medical device

- Designed a patentable bioelectric sensor and real-time monitoring system for detecting IV infiltration
- Achieved 100% accuracy in blood-tissue differentiation using an SVM model for proof-of-concept prototype
- Led 80+ user and expert interviews to determine engineering, regulatory, and clinical design requirements

Awards: James Dyson National Winner (\$3k) and International Top 20, Microsoft Discover AI – Healthcare Winner (\$6k), Medical Device Design Center – Principal Award (\$5k), UBC Innovation on Board Start-Up Competition Runner Up (\$2.5k), New Venture Design Best Project (\$800), New Venture Design Industry Award (\$600), RBC Get Seeded Winner (\$500)

“Into the Forest” Game | ETH Zurich – Virtual Reality

Spring 2021

Art Direction and Game Integration

Unity, Blender, C#

- Designed an immersive and multimodal web-based escape game through creating concept art, storyboards, Blender models, and Unity environments. Try out the [game demo](#).

H4ptic Sensory Feedback Prosthesis | Hatching Health

Spring 2019

Research Lead

Arduino, sensors, sensory substitution

- Designed a sensory substitution device for prosthetic users that converts force to haptic feedback
- Researched sensory feedback method that leverages neuroplasticity and somatosensory cortex remapping

Awards: UBC Applied Science Best Technical Innovation (\$1k), Hatching Health Runner Up

HoloLens Point Cloud Registration | ETH Zurich – 3D Vision

Spring 2018

Project Course Member

MATLAB, HoloLens

- Adapted the “Guaranteed Outlier Removal” point cloud registration algorithm with “Iterative Closest Point” algorithm in MATLAB to reduce HoloLens 3D point cloud alignment errors

SKILLS

Software: Python, Java, Scala, C/C++, ROS, MATLAB, SQL, AWS, REST, Arduino, QNX, Linux, Unity, Blender

Libraries: TensorFlow, PyTorch, scikit-learn, NumPy, pandas, matplotlib, SciPy

Engineering: SolidWorks, Fusion360, ANSYS, Arduino, 3D printing, soldering, instrumentation

AWARDS

| | |
|-------------|---|
| 2020 | Order of the White Rose Scholarship Finalist – Nominated by UBC Applied Science |
| 2020 | Top 5% Academic Ranking – UBC Applied Science and Mechanical Engineering |
| 2020 | Canada Graduate Scholarships-Master’s (\$17,500, declined) – NSERC Canada |
| 2019, 2020 | Speak Out for Engineering Americas (1 st Place) – Institution of Mechanical Engineers |
| 2019 | Women in Technology Scholarship (\$10,000) – IKB BC Scholarship Society |
| 2017 | Go Global Research Abroad Programs Award (\$2000) – University of British Columbia |
| 2016 | NSERC Experience Award (\$4500) – NSERC Canada |
| 2014 – 2020 | UBC Dean’s Honour List – University of British Columbia |

ADVISORY & MENTORSHIP

connect-f, nwPlus | STEM Mentor

2020 – Present

- Mentoring high school students in exploring an education and career in engineering and computer science

International Children’s Advisory Network (iCAN) | Conference Committee Chair

2014 – 2019

- Led a 10+ member international team to plan events and fundraisers for the annual iCAN Summits
- Reviewed and improved upon European Medicine Agency’s pediatrics clinical research policies

Kidscan Youth Advisory Council | Youth Advisor & Mentor

2013 – 2018

- Advised 10+ Vancouver research teams on promoting youth involvement in pediatrics research
- Reviewed Canada-wide policies for standardizing clinical pediatrics research consent/assent protocol