# Jessica Yi Fei Bo

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CONTACT

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EDUCATION

**University of Toronto**, Toronto, Canada
*PhD in Computer Science,* expected 2027
Topic: design of human-AI interaction technologies.
Advisor: Prof. Ashton Anderson

**ETH Zurich**, Zurich, Switzerland
*MSc in Mechanical Engineering (Robotics),* 2023
Thesis at **Massachusetts Institute of Technology** and **Harvard Medical School**: "Improving Deep Learning Model Generalizability with Adversarial Augmentations for Time-Series Physiological Data"
Advisors: Prof. Giovanni Traverso, Dr. Hen-Wei Huang, Prof. Peter Chai

**University of British Columbia**, Vancouver, BC, Canada
*BASc In Mechanical Engineering (Biomedical),* 2020
UBC Dean's Honour List in all academic years
Thesis: "Wheelchair detection and state estimation using laser scanning sensors for mobile robots"
Advisor: Prof. Machiel Van der Loos

AWARDS & HONOURS

Grace Hopper Student Scholar, AnitaB.org, 2023
DeepMind Scholarship (declined), DeepMind, 2023
Gates Cambridge Scholarship Finalist, Cambridge University, 2023
Graduate Research Grant, IEEE Computational Intelligence Society, 2022
Master Thesis Grant, Zeno Karl Schindler Foundation, 2022
Swiss-European Mobility Scholarship, Swiss-European Mobility Programme, 2022
Heyning-Roelli Mobility Grant, Heyning-Roelli Foundation, 2021
Summer@EPFL Research Fellowship, École polytechnique fédérale de Lausanne, 2021
ICLR 2021 Conference Attendance Scholarship, Google, 2021
Order of the White Rose Scholarship Finalist , UBC Applied Science, 2020
Top 5% Academic Ranking, UBC Applied Science and Mechanical Engineering, 2020
Canada Graduate Scholarships-Master's (declined), NSERC Canada, 2020
Speak Out for Engineering Americas 1st Place, Institution of Mechanical Engineers, 2019
Women in Technology Scholarship, Irving K Barber BC Scholarship Society, 2019
NSERC Experience Award, NSERC Canada, 2016

JOURNALS PUBLICATIONS

Vinker Y, Pajouheshgar E, **Bo J**, Bachmann R, Bermano AH, Cohen-Or D, Zamir A, Shamir A (2022). "CLIPasso: Semantically Aware Object Sketching". Best Technical Paper at SIGGRAPH 2022.

CONFERENCE PUBLICATIONS

**Bo** J, Pan H, Lim B (2023). "Incremental XAI: Memorable Understanding of AI with Incremental Explanations". In submission to CHI 2024.

**Bo J**, Ta K, Nishida R, Yeh G, Tsang V, Bolton M, Ranger M, Walus K (2022). "ATTENTIV: Instrumented Peripheral Catheter for the Detection of Catheter Dislodgement in IV Infiltration". IEEE EMBC 2022.

Agrawal D*, Lobsiger J*, **Bo J,** Kaufmann V, Armeni I (2022). "HoloLabel: Augmented Reality User-In-The-Loop Online Annotation Tool for As-Is Building Information". EC3 2022.

**Bo J**, Van der Loos HFM (2021). "Detection of Wheelchair Orientation in Human-Robot Interactions". BIOMDLORE 2021.

## ABSTRACTS

**Bo J**, Huang HW, Chan A, Traverso G (2022). "Adversarial Masking for Pretraining ECG Data Improves Downstream Model Generalizability". ML4H 2022 and TS4H workshop at NeurIPS 2022.

**Bo J** (2020). "Detection of Wheelchairs Using Laser Scanning Sensors for Mobile Robotics". Best Oral Presentation at UBC MURC 2020.

## INVITED TALKS

"Wheelchair Detection and State Estimation using Laser Scanning Sensors for Mobile Robots", School of Biomedical Engineering Seminar, University of British Columbia, 2020.

## RESEARCH EXPERIENCES

**National University of Singapore,** Singapore
*Research Engineer in the NUS Ubicomp Lab* | February – August 2023

- Worked with Prof. Brian Lim to develop a novel explainable AI (XAI) technique for improved memorability and understanding of AI systems. Paper under submission.

**Massachusetts Institute of Technology,** Cambridge, MA, USA
*Visiting Research Student in the Traverso Lab* | February – December 2022

- Worked with Prof. Giovanni Traverso and Dr. Henwei Huang to develop adversarial augmentations for clinical time-series data to improve deep learning generalizability.
- Worked with Dr. Peter Chai to investigate the patient-perceived ethics and acceptability of a novel implantable medical device.

**École polytechnique fédérale de Lausanne (EPFL),** Lausanne, Switzerland
*Research Assistant in the Visual Intelligence and Learning Laboratory* | May – August 2021

- Worked with Prof. Amir Zamir to investigate perceptual capabilities developed by reinforcement learning agents trained on embodied navigation tasks.
- Developed an abstract sketch synthesis tool with collaborators at Tel Aviv University.

**Attentiv Medical,** Vancouver, BC, Canada
*Co-Founder and Research Lead* | January 2020 – August 2022

- Worked with Prof. Konrad Walus and Prof. Manon Ranger to design a patentable bioelectric sensor and real-time monitoring system for detecting IV failures and led 80+ user and expert interviews to determine engineering, regulatory, and clinical design requirements.

*Awards: James Dyson National Winner (Canada) and International Top 20, Microsoft Discover AI - Healthcare Winner, Medical Device Design Center Principal Award, UBC Innovation on Board Start-Up Competition (Runner Up).*

**University of British Columbia**, Vancouver, BC, Canada
*Research Assistant in CARIS Robotics Lab* | September 2019 – May 2020

- Worked with Prof. Machiel van der Loos to develop a wheelchair orientation and state estimation algorithm to improve human-robot interaction safety using laser scanning sensors.

**Lund University**, Lund, Sweden
*Research Assistant in the CERTEC Group* | May – June 2017

- Worked with Dr. Héctor Caltenco to prototype a hand spasticity rehabilitation device that provides motion-triggered feedback and real-time control of a computer keyboard.

## INDUSTRY EXPERIENCES

**Coursera**, Toronto, ON, Canada (remote)
*Software Engineering Intern* | May – August 2020

- Led the backend consolidation of billing information for 6.5M+ monthly transactions.
- Analyzed 900+ A/B experiments to identified statistically significant revenue patterns.

**Amazon**, Vancouver, BC, Canada
*Software Engineering Intern* | May – July 2019

- Designed a backend pipeline using AWS services to guarantee real-time event polling.
- Implemented an event-processing service in Java for 120k+ annual membership events.

**Blackberry QNX**, Ottawa, ON, Canada
*3D Vision R&D Intern* | September – December 2018

- Developed a LiDAR processing algorithm that detects road signs and free space in real-time.
- Fused 3D LiDAR point cloud data with 2D camera images for visualization at CES 2019.

## SERVICE AND VOLUNTEERING

**Open Roboethics Institute**, Montreal, QC, Canada (remote)
*Competitions & AI Fairness Toolkit* | September 2021 - ongoing

**Machine Learning Corner, Traverso Lab**, Cambridge, MA, USA
*Founder and Organizer of Reading Group* | March – December 2022

**Neural Information Processing Systems (NeurIPS)**, New Orleans, LA, USA
*Conference Volunteer* | December 2022

**Connect-F Mentorship Program**, Vancouver, BC, Canada (remote)
*STEM Mentor for High School Students* | September 2020 – September 2021

**International Conference on Engineering Design (ICED),** Vancouver, BC, Canada
*Conference Volunteer* | August 2017

**UBC Biomedical Engineering Student Team,** Vancouver, BC, Canada
*Research Team for Orthopedic Medical Device* | October 2016 – May 2020

**UBC Engineering Undergraduate Society,** Vancouver, BC, Canada
*Graphic Designer for Event Communications* | September 2015 – May 2018

**UBC Orbit Satellite Design Student Team,** Vancouver, BC, Canada
*Satellite Orbital Controls Team* | September 2015 – May 2016

**International Children's Advisory Network**, Worldwide
*Conference Committee Chair and Youth Council* | August 2015 – December 2019

**Kidscan Youth Advisory Council**, Vancouver, BC, Canada
*Youth Advisor for Pediatric Research* | January 2014 – December 2019

## SKILLS

**Programming**: Python, PyTorch, Java, MATLAB, SQL, ROS, Linux, AWS

**Engineering**: Unity, Blender, HoloLens, AWS, Arduino, CAD, fabrication, video editing