

Jessica Yi Fei Bo

CONTACT	Email: jessica7bo@gmail.com jbo@cs.toronto.edu Website: https://jessica-bo.github.io/
EDUCATION	University of Toronto , Toronto, Canada <i>PhD in Computer Science</i> , expected 2027 Topic: design of human-AI interaction technologies. Advisor: Prof. Ashton Anderson ETH Zurich , Zurich, Switzerland <i>MSc in Mechanical Engineering (Robotics)</i> , 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 <i>BASc In Mechanical Engineering (Biomedical)</i> , 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 Gates Cambridge Scholarship Finalist, University of Cambridge, 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 Graduate Entrance Grant (declined), UBC Designing for People Group, 2020 Speak Out for Engineering Americas 1 st 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”. <u>Best Technical Paper</u> at SIGGRAPH 2022.
CONFERENCE PUBLICATIONS	Bo J , Pan H, Lim B (2023). “Incremental XAI: Memorable Understanding of AI with Incremental Explanations”. UNDER 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". BIOMDL0RE 2021.

ABSTRACTS	<p>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.</p> <p>Bo J (2020). "Detection of Wheelchairs Using Laser Scanning Sensors for Mobile Robotics". <u>Best Oral Presentation</u> at UBC MURC 2020.</p>
INVITED TALKS	<p>"Wheelchair Detection and State Estimation using Laser Scanning Sensors for Mobile Robots", School of Biomedical Engineering Seminar, University of British Columbia, 2020.</p>
RESEARCH EXPERIENCES	<p>National University of Singapore, Singapore <i>Research Engineer in the NUS Ubicomp Lab</i> February – August 2023</p> <ul style="list-style-type: none">• Worked with Prof. Brian Lim to develop a novel explainable AI (XAI) technique for improved memorability and understanding of AI systems. Paper under submission. <p>Massachusetts Institute of Technology, Cambridge, MA, USA <i>Visiting Research Student in the Traverso Lab</i> February – December 2022</p> <ul style="list-style-type: none">• 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. <p>École polytechnique fédérale de Lausanne (EPFL), Lausanne, Switzerland <i>Research Assistant in the Visual Intelligence and Learning Laboratory</i> May – August 2021</p> <ul style="list-style-type: none">• 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. <p>Attentiv Medical, Vancouver, BC, Canada <i>Co-Founder and Research Lead</i> January 2020 – August 2022</p> <ul style="list-style-type: none">• 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. <p><i>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).</i></p> <p>University of British Columbia, Vancouver, BC, Canada <i>Research Assistant in CARIS Robotics Lab</i> September 2019 – May 2020</p> <ul style="list-style-type: none">• 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. <p>Lund University, Lund, Sweden <i>Research Assistant in the CERTEC Group</i> May – June 2017</p> <ul style="list-style-type: none">• 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. <p>Coursera, Toronto, ON, Canada (remote) <i>Software Engineering Intern</i> May – August 2020</p> <ul style="list-style-type: none">• Led the backend consolidation of billing information for 6.5M+ monthly transactions.• Analyzed 900+ A/B experiments to identified statistically significant revenue patterns. <p>Amazon, Vancouver, BC, Canada <i>Software Engineering Intern</i> May – July 2019</p> <ul style="list-style-type: none">• 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 Team | 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