

## EDUCATION

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- 2025 - 2026    **Master of Data Science**  
University of British Columbia, Vancouver, BC  
*Skills: Programming, Data Manipulation, Statistics, Machine Learning*
- 2024 - 2025    **Key Capabilities in Data Science - UBC Extended Learning**  
University of British Columbia, Vancouver, BC  
*Skills: Python, Numpy, Pandas, Data Processing, Data Visualization, Scientific Writing*
- 2018 - 2023    **Bachelor of Applied Science - Biomedical Engineering - Bioinformatics**  
University of British Columbia, Vancouver, BC  
Graduated with distinction, 3.75 GPA  
Dean's list (2018 - 2020)

## RESEARCH EXPERIENCE

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**Cognitive Neuroscience of Schizophrenia Lab**, BC Children's Hospital Research Institute, BC Children's Hospital  
*Research Assistant* | May 2024 - Present

- Process, analyze, and visualize fMRI brain images using statistical and machine learning algorithms.

*Skills: MATLAB, SPSS, constrained Principal Component Analysis (cPCA), fMRI Data Analysis, Manuscript Writing*

**Computational Ophthalmic Imaging Lab**, Eye Care Centre, Vancouver General Hospital

*Research Assistant* | October 2024 - April 2025

- Apply multi-volume registration and coefficient of variance (CoV) to quantify retinal capillary perfusion on optical coherence tomography angiography (OCTA) data.

*Skills: Data Acquisition, Data Processing, Signal Processing Algorithms, Literature Review*

## PUBLICATIONS

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1. Redway, S., Jian, L., Yip, L., Tsang, J., & Woodward, T. S. (2025). Cognitive Mode Detectable with Task-Based fMRI: Default Mode A (DMA). PsyArXiv. [https://doi.org/10.31234/osf.io/fqbu3\\_v2](https://doi.org/10.31234/osf.io/fqbu3_v2)
2. Redway, S., Arreaza, L., Shahki, J., Zeng, E., Tsang, J., & Woodward, T. S. (2024). Cognitive Mode Detectable with Task-Based fMRI: Re-Evaluation (RE-EV). PsyArXiv. <https://doi.org/10.31234/osf.io/y7pv2>.

## PRESENTATIONS

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1. Tsang, J., et al. **Deep Learning for Speckle Reduction in OCT Images**. University of British Columbia Faculty of Applied Science Design and Innovation Day, April 11, 2023, Vancouver, BC.
2. Tsang, J., Tran, J., Yeung, R., **Venoarterial Extracorporeal Membrane Oxygenation for Neonatal Respiratory and Cardiac Failure**. University of British Columbia School of Biomedical Engineering, April 5, 2021, Vancouver, BC.

3. **Tsang, J., Tran, J., Tang, G., Truong, H., Vitamin C Degradation Under Electromagnetic Radiation: Microwave.** University of British Columbia Faculty of Science Department of Chemistry, March 28, 2020, Vancouver, BC.
4. **Tsang, J., Shpeller, L., Lim, R., Asaoka, N., Mobile Application Therapy for Agenesis of the Corpus Callosum.** University of British Columbia School of Biomedical Engineering, November 24, 2019, Vancouver, BC.

## WORK

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### Sunny Eye Care

*Optometric Assistant* | October 2024 - April 2025

- Working directly with the optometrist and optician to assist with delivering eye care.
- Patient reception, scheduling appointments and submitting insurance claims for patients.

*Skills: Autorefractor, Pupilometer, Communication, Administrative Tasks, Attention to Detail*

### Private Tutoring

*Calculus, Statistics, Physics and Chemistry Tutor* | September 2018 - Present

- Instructed mathematics, statistics, physics, and chemistry with customized lesson plans.

*Skills: Communication, Presentation, Educational Content Development*

### Egg Yolks Bakery, [Instagram](#)

*Founder and Manager* | May 2023 - Present

- Designed marketing materials and media content, growing audience to 300+ followers.

*Skills: Storyboarding, Photography, Video Editing, Social Media Strategy*

### London Drugs Pharmacy, Moscrop Secondary School career experience program, Burnaby, BC

*Pharmacy Assistant* | December 2017 - January 2018

- Accurately processed and dispensed prescriptions under the supervision of pharmacists.

*Skills: Pharmaceutical inventory management, communications, customer service*

## TECHNICAL PROJECTS

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### Deep Learning-Based Reconstruction of Optical Coherence Tomography (OCT)

*Project Member* | September 2022 - May 2023

- Designed and implemented a convolutional neural network to reconstruct high signal-to-noise ratio (SNR) retinal OCT images.
- Performed OCT image preprocessing in MATLAB.
- Created a user-friendly graphical user interface using Qt framework in Python.

*Skills: AI Model Development, UI and UX design*

### UBC AgroBot

*Captain and Team Lead* | September 2019 - July 2023

- As captain, developed detailed project roadmaps, projected team budgeting for a 2-year time period, and utilized Agile methodology to manage a team of 70+ members across 6 sub-teams to successfully initiate the first field test of the team robot in collaboration with local farms.
- Reached out to industry sponsors and promoted team initiatives through presenting to educational and industry audiences, improving team recruitment and obtaining over \$10,000 in funding.

- Conceptualized and created 2-dimensional and 3-dimensional designs for multiple robot components using SolidWorks and waterjet cutting techniques.
- Built electrical circuits with Raspberry Pi, connecting various robot components together, including stepper motors, motor drivers, batteries, switches, etc.

*Skills: Project Coordination, Stakeholder Communication, Problem-Solving, Leadership*

### **Liver Cancer Analysis with the Cancer Genome Atlas (TCGA)**

*Project Lead* | September 2021 - December 2021

- Analyzed the potential factors that can affect the prognosis of liver hepatocellular carcinoma patients using TCGA cancer dataset.
- Performed Kaplan-Meier survival analysis to obtain statistically significant factors ( $p < 0.05$ ).

*Skills: R, Statistical Analysis, Data Visualization*

### **Ventilator Trackers for Surrey Memorial Hospital**

*Project Lead* | January 2021 - April 2021

- Designed a real-time tracking system to monitor the deployment of ventilators within the hospital.
- Conducted client consultations to accurately understand the project's needs, requirements, and constraints from the stakeholders.
- Brainstormed potential solutions and assessed feasibility using engineering design principles.
- Diligently documented the entire design process in detail across multiple Design History Files.

*Skills: UI and UX design, Client Consultation, Design History Files, Prototyping*

### **Activity Monitor For Lower Back Pain Treatment**

*Project Member* | January 2020 - April 2020

- Designed a wearable device to give immediate feedback to patients performing physiotherapy treatments.
- Build a hardware prototype with Arduino and breadboards.
- Prepared professional reports and Design History Files for project documentation.

*Skills: Hardware, Arduino circuits, C++, Design History Files*

## **PROFICIENCIES AND CERTIFICATES**

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**Programming:** Python, MATLAB, R, SQL, SPSS

**Technical:** AI Model Development, Image Processing, GUI Design, Project Planning, Media Asset Creation

**Tools:** Microsoft Office Suite, SolidWorks, Qt, Canva

**Soft Skills:** Communication, Collaboration, Problem-Solving, Initiative, Attention to Detail

**Languages:** English (fluent), Mandarin (fluent), Cantonese (fluent)

**Certificates:** [Programming in Python for Data Science](#), [Certified SQL Developer](#)

## **HOBBIES**

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**Baking:** [The Great Canadian Baking Show Season 9](#)