Alexandre St-Aubin

1225 W 14th Avenue, unit 305
Vancouver, BC, Canada, V6H 1P7

alex.staubin2@gmail.com
Personal website: https://alestaubin.github.io

Education

The University of British Columbia   September 2025 – Present
Master of Science in Computer Science   *Vancouver, British Columbia, Canada*

McGill University   Fall 2022 – Winter 2025
Joint Honours BSc, Mathematics and Computer Science, GPA: 3.85/4.0   *Montréal, QC, Canada*
- Relevant Courses: Applied Machine Learning, Applied Robotics, Fundamentals of Computer Vision, Honours Convex Optimization, Topics in AI for Robotics, Reinforcement Learning.

Research Experience

Research Interests: Computer Vision, Robotics, Autonomous Vehicles

Research Intern   July 2024 – December 2024
Mila - Quebec AI Institute, Complex Data Lab
- Worked under the supervision of Professors Reihaneh Rabbany (McGill) and Jean-François Godbout (Université de Montréal).
- Conducted research on the societal and political impact of deepfakes, with a focus on the believability of AI-generated media.
- Evaluated state-of-the-art diffusion models to assess the quality and realism of generated images.

Research Intern   May 2024 – September 2024
McGill University, Centre for Intelligent Machines
- Conducted research in long-horizon motion control of robotic arms, supervised by Professor Hsiu-Chin Lin at McGill University.
- Developed a novel method for single-shot learning of long-horizon manipulation tasks.
- St-Aubin, A., Abyaneh, A. and Lin, H.-C., Single-Shot Learning of Stable Dynamical Systems for Long-Horizon Manipulation Tasks.

Directed Reading Program   January 2024 – May 2024
McGill University, Faculty of Science, Dept. of Mathematics and Statistics
- Engaged in a machine learning study and conducted a research project, guided by a graduate student.
- Report: *An Introduction to Supervised Machine Learning.*

Awards & Honors

NSERC Canada Graduate Scholarship-Master's   2025 – 2026
Held at the University of British Columbia.   *Amount: 27,000 CAD*
(Offer rejected) University of Waterloo financial support   2025 – 2026
Master of Mathematics program, David R. Cheriton School of Computer Science.   *Amount: 29,000 CAD / Year*
Science Undergraduate Research Award (SURA)   Summer 2024
Research funding for full-time research and development activities.   *Amount: 8,700 CAD*

Work Experience

Teaching Assistant – Intermediate Algorithm Design and Analysis (CPSC 320)   Sept. 2025 – Present
The University of British Columbia, Department of Computer Science   *Vancouver, BC, Canada*
- Hold weekly office hours to answer questions from students.
- Hold weekly tutorials to review class material for 20-30 students.
- Coordinate a team of undergraduate TAs for test grading.

Photographer   August 2024 – Present
Agence Voltaic inc.   *Montréal, QC, Canada*
- Event photography across all Montreal Universities. View my work at this url: alexstaubinphoto.com

Course Grader – Honours Linear Algebra (MATH 251)   January 2024 – April 2024
McGill University, Faculty of Science, Dept. of Mathematics and Statistics   *Montréal, QC, Canada*
- Graded the assignments of honours students in MATH 251.

Intern   June 2023 – December 2023
Institut de la Statistique du Québec (ISQ)   *Montréal, QC, Canada*
- Developed a VBA application which streamlined the process of estimating survey completion times.
- Sorted and interpreted open-ended responses using word analysis programs.
- Contributed to provincial research studies such as the *Québec Health Survey of High School Students* (QHSHSS) and the *Québec Survey on Tobacco and Vaping Products*.

Relevant Coursework

Adapting PAD to Trifinger Robotic Manipulation in Causal World   Fall 2025
CPSC 532X – Adaptation and Adaptive Computation   *UBC*
- A self-supervised Test-Time Adaptation framework that leverages an auxiliary Inverse Dynamics objective to update the agent's encoder during deployment.
- Evaluated the method on the CausalWorld robotic benchmark under two distinct shift types: physical dynamics and spatial distribution. Project page.

TransCoPhy: Modernizing Causal Physical Reasoning with Transformers   Fall 2025
CPSC 532Y – Causal Machine Learning   *UBC*
- Explored the problem of counterfactual physical reasoning from visual input.
- Modernized the existing CoPhyNet architecture (Baradel et al., ICLR 2020) by replacing its RNN core with a Transformer, creating TransCoPhy. Project page.

Network Interventions to Limit Misinformation Spread on Reddit   Fall 2025
CPSC 534L – Computing and Learning from Graphs   *UBC*
- Investigated network-based interventions to limit misinformation propagation on Reddit using the FACTOID dataset of users and their interactions. Project page.

Improving Drotrack   Fall 2024
COMP 558 – Fundamentals of Computer Vision   *McGill University*
- Enhanced the performance of a 2020 drone-based tracking paper by implementing techniques like Kalman filters, optical flow, and ORB features. Code and report available here.

Machine Learning   Fall 2024
COMP 551 – Applied Machine Learning   *McGill University*
- Emotion classification using LLMs, Regularization and model evaluation, Classification of image data with MLPs and CNNs. Code and reports available here.

Image Deblurring   Winter 2024
MATH 563 – Honours Convex Optimization   *McGill University*
- Deblurred images by implementing convex optimization algorithms such as Spingarn's Method, Primal-dual Douglas Rachford Splitting, ADMM, and Chambolle-Pock in Matlab. Code and report available here.

Skills

Programming languages: Python, JAVA, C/C++, MATLAB, VBA, R.
Bilingual: French, English.
Other : LaTeX, Unix/Linux, Git, ROS, SLURM, SQL, Pytorch, Numpy, Pandas, Excel.