

Alexandre St-Aubin

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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

- Supervised by Professor Evan Shelhamer, working on Deep Learning with a focus on Vision, Robustness, and Adaptation.

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, Deep learning, Robotics, Test-Time Adaptation, Robustness

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 – August 2025
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 : L^AT_EX, Unix/Linux, Git, ROS, SLURM, SQL, Pytorch, Numpy, Pandas, Excel.