

Nico Schiavone

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EDUCATION

University of Toronto, Department of Computer Science

M.Sc. Computer Science

Vector Institute Affiliate; Supervisors: Dr. Sheila McIlraith, Dr. Eldan Cohen

Sept 2024 – May 2026

Toronto, ON

University of Alberta

B.Sc. Electrical and Computer Engineering - Engineering Physics with a Mathematics Minor

4.0/4.0 Cumulative GPA, First Class Standing

Sept 2019 – May 2024

Edmonton, AB

Teaching Assistant Positions: U of T DCS: CSC 110 Introductory CS

EXPERIENCE

University of Alberta

Machine Learning Researcher | Python, PyTorch

Jan 2023 – June 2024

Edmonton, AB (Remote)

- Designed an efficient **computer vision** algorithm in Python, utilizing a novel active learning algorithm that rivals state-of-the-art models while using 80% less annotation data, resulting in a **first author** conference paper, published at IEEE CAI 2024 and selected for **oral presentation** (top ~5% of accepted papers). ([GitHub](#))
- Engineered algorithms using **reinforcement learning** and **NLP** with **large pretrained models** for data efficient classification based on adaptive image synthesis, resulting in another **first author** manuscript. ([GitHub](#))

TELUS

Software Engineer Co-op | Python, Java, C++, SQL, GCP

Jan 2023 – Aug 2023

Toronto, ON (Remote)

- Spearheaded the development of a **full stack** end-to-end Python XML scripting tool for a 20+ person team to automatically correct errors between sets of files, reducing the time spent per file by 95%.
- Worked in an agile development environment, leading daily standups for a tools sub team of 6 people.
- Developed a **full stack** document extraction tool, increasing pipeline efficiency by 90+% for teams of 10+ people.
- Prototyped a revenue prediction data analysis planning tool deployed in GCP, reducing the time sink by 75%.
- Frequently presented final products to senior leadership in written and oral form.

TRIUMF

Hyper-Kamiokande Research & Development Co-op | C++, Python

May 2022 – Aug 2022

Vancouver, BC

- Independently operated and maintained an entire **DAQ gantry** and laser test facility for the Hyper-K group.
- Designed a Raspberry-Pi based safety and monitoring system in Python for a sensitive test facility of 15+ people.
- Contributed high quality code to the existing TRIUMF codebase, used by 50+ researchers nationwide.

University of Alberta Marsiglio Research Group

Scientific Computing Researcher in Quantum Physics | Python, Julia

May 2021 – Aug 2021

Edmonton, AB

- Researched the effect of inhomogeneous pairing interactions on the symmetry of the superconducting state.
- Implemented BCS theory and BdG formalism in Python and Julia, including algorithm runtime analysis and optimization for 75% faster calculations.

University of Alberta Tang Research Group

Data Analysis Researcher | Abaqus, C++, Python

May 2020 – Aug 2020

Edmonton, AB

- Utilized cohesive zone modelling on a bio-inspired interface for a new type of recyclable lithium-ion batteries.
- Performed stress simulations in Abaqus with the results analyzed in C++ and Python, simulating crack propagation from various degrees of peeling, and collaborating with experimental researchers in tandem.

Robotics and Vision Lab at the University of Alberta

Machine Learning Researcher / Software Engineer Intern | Python, TensorFlow

July 2018 – Aug 2018

Edmonton, AB

- Developed a deep learning model in Python to classify breast cancer images with 90+% accuracy in a supervised setting.
- Prepared a histopathology dataset from full resolution images gathered from a nearby hospital.
- Designed a line-tracking robot in C for collision avoidance to navigate a difficult course without errors.

PUBLICATIONS

N. Schiavone, X. Li (2024). *Reinforcement Learning with Generative Models for Compact Support Sets* ([link](#))

N. Schiavone*, J. Wang*, S. Li, R. Zemp, X. Li (2024). *MyriadAL: Active Few Shot Learning for Histopathology*. [IEEE CAI 2024, **Oral Presentation**, ([link](#))]

PROJECTS

UNI-Scraper ([GitHub](#)) ([Demo](#)): Web scraping tool using Scrapy and Playwright in Python for easy viewing of the entire catalogue of UNIQLO. Front-end built for dynamic CSV display and filtering, including per-column search. Stack includes Python, Django, Supabase, PostgreSQL, TypeScript, and React.js.

Huginn - Autonomous Retrieval Drone ([GitHub](#)): Self-guided custom drone using computer vision for object detection, real-time classification, and a novel magnetic interface for object pickup. Made in Python using PyTorch, Mavlink, and ROS, with a front-end in JavaScript with Bootstrap4.

AWARDS

NSERC Undergraduate Student Research Award (2022 [declined], 2021, 2020),
Joseph and Edwina Charyk Scholarship in Engineering Physics (2022, 2021),
Louise McKinney Scholarship (2022),
Jason Lang Scholarship (2021, 2020),
University of Alberta Faculty of Engineering Inspiring Leadership award (2020),
AP National Scholar (12 exams, 2019),
HIP Computing Science Scholar (2018).

SKILLS & INTERESTS

Skills:	Git, mathematical modelling, research, computer vision, machine learning, deep learning, algorithms, data science, control systems, leadership, communication, accountability, scientific programming, LaTeX, Linux.
Interests:	Painting, calligraphy, fountain pens, art history, math competitions and competition problems, competitive programming.
Activities:	Putnam/IMO prep club member; Codeforces weekly; Ultimate club member (non-varsity); president of a tabletop game club; co-founder of Healthverse (medical

supplies redistribution charity); merchandise coordinator for the Eng. Phys. Club.