

Matthew Varona

✉ varona@cs.toronto.edu | 🏠 matthew.wiki | in [mjvar](#)

Education

University of Toronto

DOCTOR OF PHILOSOPHY, COMPUTER SCIENCE

Toronto, Canada

2024 - Present

- Advisor: Prof. Carolina Nobre

New York University Abu Dhabi

BACHELOR OF SCIENCES, COMPUTER SCIENCE AND INTERACTIVE MEDIA (GPA: 3.778/4)

Abu Dhabi, UAE/New York, USA

2019 - 2024

- Capstone advisor: Prof. Enrico Bertini, Northeastern University

Research Experience

University of Toronto - Human Interaction Visualiation Lab

DOCTORAL RESEARCHER

Toronto, Canada

August 2024 - Present

- Currently working on data visualization literacy under Prof. Carolina Nobre.

Northeastern University - Khoury Visualization Lab

RESEARCH INTERN

Remote

May 2021 - April 2024

- Project: **Visualization of machine learning classifier boundary points**, with Prof. Enrico Bertini
- Built a Python library that computes decision boundary points of classifier models to support model interpretability.
- Designed and implemented novel interactive visualizations of boundary points using d3.js.
- Formalized the conditions necessary for boundary points to be useful assets in visual, example-based model validation.

Hasso Plattner Institute - Human-Computer Interaction Lab

RESEARCH INTERN

Berlin, Germany

May 2022 - August 2022

- Project: **Adaptive vector drawing toolsets for laser cutting**, with Prof. Patrick Baudisch
- Analyzed drawing workflows and interviewed makers to create a taxonomy of drawing paradigms for laser cutting outlines.
- Developed a Typescript+Node app that analyzes a set of laser-cut outlines to generate optimal toolsets for creating similar assets.

NYU Abu Dhabi - Center for Space Science

RESEARCH ASSISTANT

Abu Dhabi, UAE

October 2020 - June 2021

- Conducted anomaly detection on radiation data from Mars for the UAE's first interplanetary space mission (Emirates Mars Mission).
- Developed an automated visual analytics pipeline in Python to streamline solar event discovery from Martian atmospheric data.

Teaching Experience

Summer 2025

Prep TA for **CSC316 (Data Visualization)** - University of Toronto

Winter 2025

Teaching assistant for **CSC316 (Data Visualization)** - University of Toronto

Fall 2024

Teaching assistant for **CSC318 (The Design of Interactive Computational Media)** - University of Toronto

Fall 2020

Teaching assistant for **IM-UH 2310 (Decoding Nature)** - New York University Abu Dhabi

2019-2020

Debate coach at the **NYUAD High School Debate Workshop**

Awards and Fellowships

2024

Departmental Fellowship (CA\$8335) - University of Toronto Department of Computer Science

2023

Graduate Application Aid Award (\$750) - Queer in AI + oSTEM

2022

Doctoral Research Scholarship (€5600) - Hasso Plattner Institute

2021

Undergraduate Summer Research Grant (\$4000) - New York University Abu Dhabi

2019

Full ride (\$337,770) - New York University Abu Dhabi

2019

Best Speaker of Asia - Asian Schools Debate Championship

2019

Philippine National Debate Champion - National Schools Debate Championship

Leadership and Service

- 2025** **Co-Founder** — Queer in CS @ University of Toronto
- 2025** **Departmental Steward for Computer Science** — CUPE 3902 Unit 1
- 2025** **Graduate Student Mentor** — CS Academy, University of Toronto
- 2023** **President** — PAUSED Video Game Society at NYUAD
- 2020** **Vice President** — NYUAD Debate Union

Industry Experience

Sakay.ph

SOFTWARE ENGINEERING INTERN

Remote

September 2020 - October 2020

- Developed customer service chatbot, collaborating with UX and engineering teams.

Sakay.ph

DATA SCIENCE INTERN

Taguig, Philippines

May 2020 - August 2020

- Worked on transit stop data infrastructure and a visualization toolkit for analyzing transit demand vs. coverage.