

Victor Li

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Education

Carleton University

MASTERS OF COMPUTER SCIENCE | SPECIALIZATION IN DATA SCIENCE

- **Thesis:** ML Controlled CPU and Memory Power and Performance Management

Ontario, Canada

Starting in Sep. 2025

Carleton University

BACHELORS OF COMPUTER SCIENCE HONORS WITH CO-OP | MINOR: MATHEMATICS

- **Courses:** Data Structures and Algorithms, Discrete Structures, Systems Programming, Software Engineering, Database Management Systems, Web Applications, Functional Programming, Reinforcement Learning
- **CGPA:** 10.7/12 (A)

Ontario, Canada

Sep. 2020 - May. 2025

Technical Skills

Programming Languages

Python, SQL, Java, JavaScript, C, C++, HTML/CSS

Data Analysis

Pandas, NumPy, SQLite, MongoDB, Jupyter Notebook

Software Development & DevOps

Docker, Git, CI/CD Pipelines, Bash Scripting

Productivity & Visualization

Microsoft Word, PowerPoint, Outlook, Excel, Power BI, LaTeX

Work Experience

Carleton University

TEACHING ASSISTANT

- Assisted the professor in teaching Introduction to Computer I and II to undergraduate students by providing support in tutorials, labs and office hours.
- Organized and led workshops for **100+ students** on Git, Docker, and other topics to provide additional opportunities not usually taught in university.
- Showcased expertise in course-related technologies and software through proactive support for students in **Python and Java**, navigating IDEs such as **VS Code and IntelliJ**, and **debugging tools and techniques**.

Ottawa

Sep. 2023 - Present

Cerio

SOFTWARE DEVELOPER

- Devised a tool that analyzed millions of lines of network data using **Python and Pandas** to extract insights regarding possible TLP aggregations, leading to a potential 65% reduction in network bandwidth usage.
- Processed 60+ topologies and routing tables using Python and Pandas to **identify anomalies** under various path selection and layer assignment algorithms, potentially reducing the impact of failures by 75%.
- Emulated various network topologies with **Docker**, inserting port and node failures under MDP and DFR algorithms to record changes in topology and routing tables to probe for possible performance upgrades.

Ottawa (Hybrid)

Jan. 2024 - Aug. 2024

Defense Research and Development Canada

MARITIME DOMAIN AWARENESS ANALYST

- Analyzed maritime data from various sources, including AIS (Automatic Identification System) radar and satellite imagery to **monitor vessel movements and activities** within a specific geographic area.
- Utilized data analysis techniques by using **Python and Visual Basic** to identify the **accuracy of different sensors** to detect Dark and Hidden Vessels.
- Collaborated with government agencies and international partners to share maritime intelligence and contribute to joint efforts in maintaining maritime security.

Ottawa (Hybrid)

May. 2023 - Aug. 2023

Royal Canadian Mounted Police

INFORMATION TECHNOLOGY SUPPORT SPECIALIST

- Provided technical support to end-users by **troubleshooting hardware and software issues** and ensuring timely issue resolution.
- Designed and developed websites, including front-end and back-end developments, using technologies like **HTML/CSS and JavaScript**.
- Developed and maintained **PowerShell** Scripts to distribute software packages nationally.

Ottawa (Virtual)

Sep. 2022 - Dec. 2022

Virtual Ventures

STEM INSTRUCTOR FOR PROGRAMMING

- Designed and developed an engaging STEM-focused **computer science curricula** that aligned with educational standards and promoted critical thinking and problem-solving skills.
- Taught a range of programming languages, including but not limited to **Python, Java, JavaScript, HTML/CSS**, tailored to the grade level and skill level of the students.
- Organized STEM-related Events and workshops to encourage student participation and interest in computer science which resulted in **120+ student participants**.

Ottawa

May. 2022 - Aug. 2022

Academic Works

Selection Theory of Leadership Retention and Political Power

Ottawa

Present

- Created a **multiagent model for Selectorate Theory** to analyze coalition dynamics and leader-citizen interactions by simulated voting and policy implementation processes, evaluating the impact on citizen utility and policy feasibility.
- Analyzed political power dynamics and coalition structures, applying concepts from Selectorate Theory to assess stability and loyalty within various governance systems.

Cops and Robbers Reinforcement Learning Model

Ottawa

Jan. 2024

- Developed a reinforcement learning model using **Gym** to optimize a 'robber' agent's pathfinding to a vault while avoiding cops with fixed patrol paths
- Applied RL techniques such as **Actor-Critic, DQN, and PPO** to enhance the agent's decision-making and navigation efficiency
- Collaborated in a team to fine-tune reward structures and hyperparameters, improving agent performance in dynamic, adversarial environments.

Strategy Analysis of Secret Hitler

Ottawa

Dec. 2023

- Designed and implemented a **multiagent system model** to simulate and analyze strategic decision-making in the game Secret Hitler, focusing on player behavior and role-based dynamics
- Developed models to evaluate **optimal strategies for different roles** (e.g., Liberals, Fascists, and Hitler), leveraging **game theory principles** to explore equilibrium states and decision-making under uncertainty
- Analyzed gameplay data to identify winning strategies and critical decision points, producing actionable insights into role coordination, deception, and policy enactment in a multiagent context

Extracurricular Activity

Carleton Computer Science Society

Ottawa

PRESIDENT

May. 2023 - May. 2024

- Elected by the student population to act as a liaison between students and the Department of Computer Science regarding academic issues, policies, and events, representing **over 2000 undergraduate students**
- Organized and oversaw a wide range of **social and academic events**, including hackathons, tech talks, workshops, networking sessions, career information events, drawing over **100 student attendees**