

Kaden Seto

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EDUCATION

University of Toronto

Bachelor of Applied Science (BASc, Engineering Science)

Toronto, ON

Sep 2024 - 2029

TECHNICAL SKILLS

Languages: Python, C/C++, JavaScript/TypeScript, Java, C#, HTML/CSS, MATLAB

Developer Tools: Git, Visual Studio Code, Node.js, Firebase, Android Studio

Libraries: Pandas, NumPy, Matplotlib, Keras, PyTorch, scikit-learn, Gymnasium & SB3, Tensorflow, Three.js, Next.js

EXPERIENCE

Operations Lead - Application Review Committee

Feb 2025 - Mar 2025

University of Toronto Machine Intelligence Student Team (UTMIST)

Toronto, ON

- **Led** the Application Review committee of **25+ members** to review applications of **1300+ applicants** for the GenAI Genesis 2025 Hackathon (Canada's Largest AI Hackathon)

Reinforcement Learning Academic Team Lead

Nov 2024 - Feb 2025

University of Toronto Machine Intelligence Student Team (UTMIST)

Toronto, ON

- **Directed** a team of developers to design UTMIST's AI² RL tournament for **400+ participants**, and applied **engineering design concepts** to ensure the team understands the scope and timeline of the project
- Researched RL libraries (**SB3**) to develop a custom **multi-agent RL training process** for **self-play PPO** framework that is **simple-to-use** and easily implementable for beginner participants
- Developed a custom platform-fighting game **MARL environment** using **Pygame** and **Pymunk**, designed UI and **Finite State Machines** to handle game logic

FTC Robotics Team Programming Lead

Sep 2022 - Jun 2024

St. Augustine Catholic High School

Markham, ON

- **Led** a team of **7 programmers** to develop **PID Encoders** for accurate autonomous movement and **odometry movement** using FTC's RoadRunner library for **trajectory planning**, qualifying for the **Ontario provincial tournament** for two years
- Trained **custom object detection models** using **OpenCV** and FTC's **Tensorflow object detection** library to capture videos to create a dataset of images of the custom object in different environments (i.e. adjusting object's orientation, lighting, & backgrounds) to train the model with.

PROJECTS

QuantNet | C++, LSTMs, Deep Learning

Oct 2024 – present

- Developing a **quantitative analysis framework for investments** in C++ with a financial engineering framework and sequence modeling to create a robust investment prediction system
- Implementing a hybrid **LSTM & MLP neural network from scratch** with **zero dependencies** (i.e. methods such as **back-propagation** and **Adam** made from scratch, all linear algebra operations from scratch)
- Implementing a **feature engineering framework from scratch** by **researching key investment analysis indicators** to enhance model quality and performance (i.e. features such as RSI, ADX)

Aegis | Python, OpenCV/Computer Vision, YOLOv11 Object Detection, PyTorch

Jan 2025 – Apr 2025

- Engineered a **Cyclist Detection and Arduino flashing LED system** aimed to prevent right-hooking cyclist incidents in Toronto, collaborating with the Advocacy for Respect for Cyclists group (ARC) to meet client needs
- Trained a **custom object detection model** using YOLOv11, achieving a **mAP50-95 of 84.6%**, average **50ms inference time** and detections up to **3.2m** on a standard phone camera
- Explored **super-resolution GAN (SRGAN)** models, implementing the **Swift-SRGAN model in PyTorch** aimed to improve detection through real-time upscaling of captured frames

OtakuNet | Python, NumPy, Matplotlib, Pandas, Tkinter, Recommender Systems

Aug 2024 – Sep 2024

- Trained a **content-based recommender system** to recommend animes based on the genres users rate
- Developed a custom **neural network framework from scratch** (i.e. methods such as **back-propagation** and **Adam** made from scratch), only using **NumPy** for linear algebra operations
- Developed **data engineering techniques** such as **Bayesian Ratings** and **normalization** from scratch and applied them to the dataset. Used **Pandas** to organize data and perform data preprocessing tasks