

Hiroataka Ishihara

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Education

- **University of California - Berkeley** California, US
Master of Engineering - Electric Engineering & Computer Sciences August 2022 - June 2023
- **University of Toronto** Toronto, Canada
Bachelor of Science - Computer Science Specialist **CGPA: 3.89/4.0** September 2016 - June 2021
Relevant Courses: Data Structures & Analysis • Database • Software Design • Object Oriented Programming • Web Programming • Operating System • Computer Vision • Machine Learning • Artificial Intelligence • Neural Nets & Deep Learning

Skills

- **Programmings** Python, JavaScript, TypeScript, Java, C, SQL, Unix, HTML5/CSS3
- **Frameworks** ReactJs, React Native, Express, Flask, Pytorch, Keras, Numpy, Pandas
- **Tools** Git, PostgreSQL, SQLite, MongoDB, L^AT_EX
- **Languages** English (fluent), Mandarin (native), Japanese (intermediate), Shanghainese (native)

Professional Experience

- **University of Toronto & Vector Institute** Toronto, Canada
Software Development Intern (Supervised by Prof. Sanja Fidler) [\[demo\]](#) Apr 2020 - Aug 2020
 - Developed a mobile application using **React Native** that allows users to automatically segment objects in images.
 - Set up state management using **React Context** to interact with the AI-predicted segmentation coordinates.
 - Realized user tool panel with **React Native SVG** library allowing users to manually refine segmentation coordinates.
 - Designed and implemented the back-end APIs with **NodeJs** and **MongoDB** for uploading and managing images.
- **University of Toronto & City of Toronto** Toronto, Canada
Research Assistant (Supervised by Prof. Amer Shalaby) Mar 2019 - Apr 2020
 - Improved public transportation efficiency at the intersections in Toronto with a **Reinforcement Learning** algorithm.
 - Built data pipeline between the algorithm and the simulation environment called "Aimsun" with **Python Socket**.
 - Encapsulated bus and corridor object data in Aimsun by leveraging **Object Oriented Programming** knowledge.
 - Reduced the bus travel time by approximately 33% and the standard deviation of the waiting time at the stop by 7%.

Projects

- **WenTie - Toronto Second-hand Product Trade App** [\[demo\]](#) Aug 2019 - Present
 - Developed a WeChat Mini Program using **WXML/WXSS** and **JavaScript** for users to trade second-hand products.
 - Incorporated AI censorship feature using **Tencent Cloud SDK** to prevent user posts containing inappropriate contents.
 - Designed and deployed serverless cloud functions with **NodeJs** and **Tencent CloudBase FaaS** to store product information, bookmarks and user messages.
- **User Behavior Analysis for Cybersecurity - Royal Bank of Canada** [\[demo\]](#) Sep 2020 - Nov 2020
 - Built a dashboard website with **React** to analyze real-time network traffic and user behavioral event logs.
 - Realized an animated 3D workplace using **ChartJS** for users to monitor real-time data points clustering.
 - Designed RESTful back-end with **NodeJS** to implement user authentication and simulate network traffic for the prototype with the CIRA-CIC-DoHBrw-2020 dataset.
 - Integrated a trained AI model with **Flask** and deployed on **Heroku** server for real-time malicious behavior prediction, and leveraged **GitHub Actions** for continuous integration.
- **Lyft Motion Prediction for Autonomous Vehicles - Kaggle Competition** Sep 2020 - Nov 2020
 - Predicted the trajectory of the surrounding cars in the next 5 seconds with **Pytorch** and Lyft Level 5 Dataset.
 - Ensembled multiple models that embed ResNet as the backbone, and trained the trajectory prediction models on Tencent Cloud Virtual Machine with a Tesla V100 GPU.
 - Finished the competition with a bronze medal and ranked at 93 / 935.