Calvin Yu

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EDUCATION

University of Toronto, St. George   *September 2018-Present*
- Specialist in Computer Science, Minor in Statistics and Mathematics
- Major GPA: 4.0/4.0, Cumulative GPA: 3.96/4.0
- Awards: New College Council In-Course Scholarship, Dean's List Scholar

RELEVANT EXPERIENCES

Research Assistant at AI4CE, New York University   *September 2022-Present*
- Reproduced papers on semantic scene completion including LMSCNet and JS3C-Net.
- Implemented post-processing such as multi-view fusion to models and improved the mIOU of LMSCNet by 17%.
- Adopted models to perform new tasks such as scene completion and take new inputs such as pseudo point cloud.

Perception Pipeline Engineer at aUToronto, University of Toronto   *September 2022-Present*
- Designed and implemented perception pipelines for traffic light state detection.
- Investigated new technologies such as Hidden Markov Model to improve the pipeline and built a proof of concept utilizing those technologies.

Undergraduate Researcher at Pair Lab, University of Toronto   *July 2021-Present*
- Created ORBIT, an open-sourced robotic framework built on NVIDIA Omniverse.
- Developed soft object interfaces, rigid object wrappers, finite state machine frameworks, and benchmark environments for ORBIT.
- Applied ORBIT to surgical robotics and trained policies to perform tasks such as peg transfer, which were then transferred to a real robot.
- Co-authored a paper submitted to IEEE Robotics and Automation Letters (RA-L).

Software Development Engineer Intern at Amazon   *May 2022-August 2022*
- Created a self-service tool for warehouse property updates that is projected to save over 100 engineer hours annually and reduce update turnaround time by over 40 days.
- Designed and implemented an event-driven approval solution to seek stakeholder approvals for warehouse property change requests.
- Built private links between AWS and the private cloud and documented the process.

Software Engineer Intern at Kijiji Canada   *May 2021-May 2022*
- Defined API specifications and implemented endpoints for business-critical features such as conversation, login, search, listing promotion, and push notification.
- Helped transition Kijiji to GCP by defining specifications on GCP API Gateway, creating microservices hosted on GCP, and exposing existing microservices to GCP.
- Researched cloud providers and architectures and presented results to company executives.
- Optimized API usage in microservices and reduced total requests by 20% for the service.
- Resolved critical issues on marketing notifications where 80% of users could not receive marketing notifications for over three months.

Teaching Assistant at University of Toronto   *January 2021-May 2021*

- Led labs with over 40 students each week to teach object-oriented programming concepts, programming methods, and data structures.
- Held office hours to answer questions from dozens of students about assignments.
- Graded midterms and finals and defined grading conventions.

PUBLICATIONS

ORBIT: A Unified Simulation Framework for Interactive Robot Learning Environments

Mayank Mittal, **Calvin Yu**, Qinxi Yu, Jingzhou Liu, Nikita Rudin, David Hoeller, Jia Lin Yuan, Pooria Poorsarvi Tehrani, Ritvik Singh, Yunrong Guo, Hammad Mazhar, Ajay Mandlekar, Buck Babich, Gavriel State, Marco Hutter, and Animesh Garg

SELECTED PROJECTS

Digit – Website to provide influencers with the analytics they need   *Fall 2022*

- Led a team of six to design and produce a web application to help influencers understand their brand as part of DCSIL, the University of Toronto's accelerator program.
- Applied NLP models to analyze comments under YouTube videos to provide sentiment analysis to influencers.
- Designed the software architecture for the MVP and created a roadmap to implement it.
- Conducted market research to analyze business viability with financial predictions.

Explore Ontario – Mobile app to educate visitors about the places they visit   *Fall 2020*

- Partnered with Ontario Parks and led a team of six to create an open-source mobile application to help reduce park signage and educate visitors about the parks they visit.
- Implemented functionalities like geofencing for location-based audio playback, displaying points of interest on a map and showing details when the user clicks on the point of interest.
- Delivered the application to Ontario Parks for further development and open-sourced the application under the MIT license.

UofTHome – Website for students to make more informed rental decisions   *Summer 2020*

- Collaborated with a partner to create a website where students can post their comments on residential buildings and seek guidance from others when searching for housing.
- Deployed the website on firebase and has helped more than 500 users and contains over 60 reviews about over 30 buildings.
- Created backend services with functionalities like posting, getting, and approving reviews.
- Created web applications for users to browse and post building reviews.