Waterloo, ON, Canada
ymulki@uwaterloo.ca

Yash Mulki

https://github.com/yashmulki
https://yashmulki.github.io

EDUCATION

University of Waterloo **September 2020 – April 2025**
Bachelor of Software Engineering – GPA 93.88/100, Dean's Honours List 1A *Waterloo, ON*

- Schulich Leader Scholarship ($100,000), Canada's most competitive merit-based STEM scholarship
- Relevant Courses: Compilers, Data Abstraction, Calculus, Linear Algebra, Statistics for Software Engineering

WORK EXPERIENCE

Waabi **January 2022 – April 2022**
Research Intern (Machine Learning) *Toronto, ON*

- **Tools Used:** PyTorch, Python, OpenCV
- Area of Research: 3D **Computer Vision** for **Autonomous Vehicles**
- Developing a **neural network** architecture to detect object trajectories in **LiDAR point cloud** sequences
- Implemented new loss functions, IoU aware confidence & other key improvements yielding a **3% performance improvement** on a **3D Object detection deep learning** model
- Analyzed & extracted insights from **50+ deep learning research papers** on object detection & related topics

Apple **May 2021 – August 2021**
Software Engineering Intern *Cupertino, CA (remote)*

- **Tools Used**: Keras, NumPy, Pandas, Sci-Kit Learn, Flask, Python, Docker & Swift
- Developed an **end-to-end machine learning** solution to automate a key manual user flow
  - Fine-tuned the **XLNet NLP model** to improve a text classification model's accuracy from **66% to 84%**
  - Developed 2 new **text classification models** with **Keras** & a backend written with **Flask**
  - Designed & developed a **macOS** client to enable users to view & act on predictions
- Developed a **containerized microservice** to automate sensor accuracy evaluation for location systems
- Rewrote, enhanced, & consolidated an **iOS** application, giving **1000+ enterprise users** access to a key utility

SKILLS

- **Languages**: Python, C++, Swift, Dart, Golang (Intermediate)
- **Tools/Technologies**: PyTorch, Keras, MongoDB, Flutter, SwiftUI

AWARDS & PROJECTS

- **Automated Proof Checker (2021)**: Developed an automated proof checker for the natural deduction **formal logic** proof theory in **C#**. Designed algorithms to parse logical input & perform type–checking
- **Hack the North Winner (2021):** Selected from 3k+ participants at Canada's largest hackathon for developing a computer vision (PoseNet) powered real-time competitive exercise iOS app with **Swift**
- **Apple WWDC Scholarship (2017, 2018, 2019, 2020):** Recognized as 1 of 350 scholars selected from student developers globally to attend WWDC based on a submission programmed in **Swift**
- **Quantum Computer Simulator (2020)**: Created a quantum circuit simulator using **C++**, implemented common linear algebra functions including matrix multiplication, Kronecker product & vector operations
- **Canada Votes, Votisor (2018-2020):** Developed 2 apps & a data aggregation API **to improve voter turnout** in Canadian elections by providing political information. **Received 5k+ downloads &** national press coverage