Ishan Baliyan

www.ishanbaliyan.com | IshanBaliyan | Ishan-Baliyan

Education

University of Waterloo — *Waterloo, Ontario*

Honors Bachelor of Computer Science — *Expected Graduation 2025*

Faculty of Mathematics Scholarship $10,000 | Awarded to Top 30 Faculty Students Based on Math Competition Scores

Skills

Programming Java · C/C++ · Go · Python · SQL · JavaScript · HTML · CSS

Tools AWS (EC2/ECS/S3) · Docker · MySQL · REST API · MongoDB · Firebase · Azure Cloud · Linux

Frameworks gRPC · React · Node.js · Express.js · .NET · TensorFlow · Bootstrap · Selenium · MaterialUI

Work Experience

Atolio Technologies (Startup) — *San Francisco (remote)*

Backend Engineering COOP — *May 2022 - Dec 2022*

- Built live-streaming microservice in **Golang** and **C++**, with **gRPC** framework, for streaming real-time user and application data using Okta **REST API** and **SDK**, resulting in real-time updates for clients, 5% efficiency in application, and 10% reduction for deployment costs.
- Deployed user live-streaming feature on main application, running on **docker** container with **AWS EC2/ECS** and **S3** on **linux host**.
- Implemented Backfilling feature that transforms data from 10,000+ users, apps and appusers to digest into application with **gRPC**.
- Solved 40+ errors in system, improving client satisfaction by 5%, while paired with Tech Lead Engineer for daily 1:1 feedback.
- Demonstrated prototype and technical analysis to 15+ executive clients, including Business Insider, Ciena and Disney, for product calls.

Massachusetts Institute of Technology (MIT) Driverless Team — *Boston (remote)*

Backend Engineering — *May 2022 - Present*

- Engineered simulation systems in **C++** and **ROS2** on **linux host**, improving simulation of racecar in **LGSVL** self-driving virtual environment.
- Built backend simulation and infrastructure for self-driving racecar in Indy Autonomous racecar competition.
- Increased system build time by 90%, by improving derived **docker devcontainer** image build process.

Waterloo Autonomous Driving Team (SAE AutoDrive Challenge) — *Waterloo*

Backend Engineering — *May 2022 - Present*

- Built **C++** systems for deployment and maintenance of vehicle autonomous systems on server cluster, serving 1000+ users.
- Implemented and fixed backend **linux host** server cluster infrastructure for machine learning models.

Google Computer Science Summer Institute (CSSI) — *Remote*

Software Developer & CSSI Scholar — *July 2021*

- Completed 4-week intensive summer program organized by Google, and designed 16+ web apps in **JavaScript/HTML/CSS** and **Firebase**.
- Built Google Chalkboard web app with **JavaScript**, **Firebase**, **Google Oath2** security, and **Python Machine learning model** with **TensorFlow** on the MNIST dataset, where app gained 50 unique clones on GitHub from cohort and presented to Google staff. ***GitHub | Demo***

MVS Systems Inc. — *Ottawa, Ontario*

Software Engineering Intern — *Aug. 2019 - Mar. 2020*

- Paid contract partnered with United Nations for developing **C++ self-driving** robot prototypes for Research & Development.
- Designed **Arduino/C++** autonomous **self-driving** on robot with **computer vision OpenCV** and **Lidar** sensors response.

Research Experience

Harvard University Wadduwage Lab — *Cambridge, United States*

Software Engineering Intern — *Jul. 2020*

- Developed a **Python** Deep Learning neural network using CNN with U-Net architecture, **Keras** and **TensorFlow** to enhance cell images.
- Denoised images of biological organisms and tested on 500+ layer images of 3D cells from both Structured and Uniform light illumination.

UWaterloo Social and Intelligent Robotics Research Lab (SIRRL) — *Waterloo, Ontario*

Software Robot Researcher — *Jul. 2020 - Present*

- Evaluating software and hardware specifications of 100+ robots in Social Robotics (under Prof. Dautenhahn, Canada Research Chair).
- Analyzing robot data insights from 8000+ papers for robot **level of autonomy, DOF, fabrication, and testing** in Systematic Review paper.

Interests ***Skydiving · UWaterloo Archery club · UWaterloo Fencing club · Chess***