

Ishan Baliyan

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Education

University of Waterloo

HONORS BACHELOR OF COMPUTER SCIENCE

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

Waterloo, Ontario

Sep 2021 - April 2026

Skills

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

Tools AWS · Linux · MySQL · MongoDB · Firebase · Docker · REST API · Azure Cloud · Git

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

Work Experience

Atolio Technologies (Startup)

BACKEND ENGINEERING COOP

San Francisco (remote)

May 2022 - Dec 2022

- Built live-streaming microservice in **C++** and **Golang**, with **gRPC** framework, for streaming real-time user and application data using Okta System Log **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

BACKEND ENGINEERING

Boston (remote)

May 2022 - Present

- Engineered simulation systems in **C++** and **ROS2** on **linux**, 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 runtime by 20%, by improving derived **docker devcontainer** image build process.

Waterloo Autonomous Driving Team (SAE AutoDrive Challenge)

BACKEND ENGINEERING

Waterloo

May 2022 - Present

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

Google Computer Science Summer Institute (CSSI)

SOFTWARE DEVELOPER & CSSI SCHOLAR

Remote

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 Oauth2** 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.

SOFTWARE ENGINEERING INTERN

Ottawa, Ontario

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

SOFTWARE ENGINEERING INTERN

Cambridge, United States

Jul. 2020

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

UWaterloo Social and Intelligent Robotics Research Lab (SIRRL)

SOFTWARE ROBOT RESEARCHER

Waterloo, Ontario

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