

# RISHABH SAMBARE

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## TECHNICAL SKILLS

**Languages:** Python, C++, Go, Javascript, SQL, Bash

**Technologies:** Tensorflow, PyTorch, Scikit-learn, Docker, React, GraphQL, Google Cloud, PostgreSQL

## EXPERIENCE

### University Health Network - Data Infrastructure

Sep. 2021 – Dec. 2021

Software Engineering Intern | Python, Docker, Scikit-learn, Jupyter, GraphQL, Bash

Toronto, ON

- Prototyped a scalable federated ML service 🔗 by integrating and containerizing 3 Python APIs, enabling bioinformaticians to train models on ~**3x more clinical data**.
- Designed a general-use data pipeline for preprocessing oncology data using Pandas and GraphQL queries, employed for 3 internal data analyses.
- Refactored internal data ingestion scripts using Bash and Python, reducing development ingestion time by 35%.

## PROJECTS

### wave-chat — Javascript, MongoDB, Express, EJS



- Designed and developed a queue-based matchmaking algorithm to connect 1500+ university students to video chats based on common interests and program of study.
- Developed an in-memory JSON object of user matchmaking queues with Javascript, enabling Wave Chat to service 5 more universities and 1000 different real-time chats.
- Created multiple API endpoints for CRUD operations to a MongoDB database using Mongoose to service Wave Chat's dashboard.

### climbing-regressor — Python, Flask, Heroku, Scikit-learn, React



- Trained a random forest regressor on 1.5M entries of scraped logbook data using Scikit-learn to predict a climber's potential based on gender, height, weight, and time climbing.
- Optimized model hyperparameters with 3-fold cross-validated grid search for a 16% prediction improvement.
- Deployed the model for inference with Flask and Heroku to serve a static React website for users.

### deranged-murakami — Python, Tensorflow, Cloud Functions, Cloud Storage, React



- Implemented a recurrent neural network using Tensorflow and the Keras API to generate Haruki Murakami-styled text from a user prompt.
- Deployed the model for inference with Cloud Functions, reducing worst-case latency times by 75% through setting a minimum instance and caching model variables.

### fss-bot — Go, GraphQL, Compute Engine, Cloud Firestore



- Created a multi-purpose Discord bot written in Go and deployed with Google Compute Engine to serve 100+ users.
- Developed the display of local weather data from external GraphQL APIs using Khan/Genqlint to guarantee type safety at compile-time.
- Designed the bot to instantly send embedded media when prompted by certain message keywords, storing responses in Cloud Firestore for low latency.

## EDUCATION

### University of Waterloo

Sep. 2020 - Expected Apr. 2025

Candidate for BCS Computer Science

- Recipient of the Math Entrance Scholarship, granted to 200 top performing students entering Math and CS.