Rishabh Sambare

📞 416-938-8696 | ✉ rsambare@uwaterloo.ca | 💼 rishabhsamb | ⓞ rishabhsamb | ↗ rishabhsamb.github.io

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 & ML Platform   Sep. 2021 – Dec. 2021

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

- Prototyped a federated ML service ↗ to run atop a national decentralized genomics infrastructure using the Flower federated learning framework, enabling researchers to train models on ~3x more data.
- Analyzed multiple federated learning research papers, leveraging findings towards design of federated learning experiments and setup.
- Designed a data pipeline for preprocessing oncology data using Pandas and GraphQL queries, employed for 3 classification tasks.
- Refactored internal data ingestion scripts using Bash and Docker, reducing development ingestion time by 35%.

Projects

climbing-regressor — *Python, Flask, Heroku, Scikit-learn, React*   ↗ ⓞ
- Trained a Scikit-learn Random Forest regressor on 1.5M entries of scraped logbook data to predict a climber's best grade based on gender, height, weight, and time climbing.
- Optimized model hyperparameters with 3-fold cross-validated grid search, achieving a 16% improvement in predictions.
- 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 an RNN trained over character sequences 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.

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.
- Created multiple API endpoints for CRUD operations to a MongoDB database using Mongoose to service Wave Chat's dashboard.
- Developed an in-memory database of user matchmaking queues with Javascript, enabling Wave Chat to service 5 more universities and 1000 different real-time chats.

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 3 Discord servers.
- Developed the display of a weather and stock data from external GraphQL APIs using Khan/Genqlient 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.