

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 Developer | Python, Docker, Flower, Scikit-learn, Jupyter, GraphQL, Bash

Toronto, ON

- Prototyped a scaleable, Dockerized, federated ML service 📄 by developing and integrating 3 Python microservices, enabling bioinformaticians to train models on ~3x more clinical data.
- Designed an ETL pipeline for preprocessing oncology data using Pandas and GraphQL queries, employing it for training 3 internal ML models.
- Built logistic regression models from synthetic clinical data with Scikit-learn to predict if patients will survive their breast cancer diagnoses (AUC 0.79).
- 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 6 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, SQL, Flask, Heroku, Scikit-learn, React



- Trained a random forest regressor on 1.5M entries of scraped logbook data from a SQLite3 database 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.
- Displayed local weather data from external GraphQL APIs using Khan/Genqlint for compile-time type safety.
- 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.
- **Courses:** Data Structures (C++), Object Oriented Programming (C++), Multivariable Calculus, Linear Algebra 2