

Harsh Agrawal

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EDUCATION

University of Waterloo

Sep 2019 - Dec 2023

Bachelor of Computer Science - 90% GPA

- Excellent Academic Standing in every term.
- Received a \$15,000 Computer Science Scholarship.
- Notable courses: OOP, Algorithms/Data Structures, Concurrency, Machine Learning, Distributed Systems.

SKILLS

Languages

C++, Python, C, Java, Rust, Scala, Shell, HTML/CSS, JavaScript

Technologies

SQL, Git, Protobuf, Tensorflow, Keras, Android, NLP, GPT-3

EXPERIENCE

Google

May 2022 - Aug 2022

Software Engineering Intern

C++, SQL, Protobuf, Flume

- Improved retail search results by **designing an attribution system** for attributing user conversion events.
- **Optimized data processing runtime by 25%** by developing efficient parallel Flume pipelines.
- Supported customers by integrating Last-Touch, Time-Decay, and Adaptive-Priority attribution models.
- Designed a general event schema in Protobuf to support user events from multiple event processing products.
- **Supported more than 10 verticals across Google Cloud** by creating a generalized cross-vertical attribution system.

Huawei

Sep 2021 - Dec 2021

Software Engineering Intern

C++, Python

- **Improved performance by 4x** for Python's big-data library pandas by adding support for multi-threading.
- Designed a proof-of-concept for partitioning system to boost runtime and reduce server load by 35%.
- **Spearheaded integration of distributed computing** to pandas allowing large datasets across hundreds of servers.

Huawei

Jan 2021 - Apr 2021

Software Engineering Intern

C++, SQL, Python

- **Improved key benchmarks by 15%** by finding optimal flags using statistical analysis on GPU compiler data.
- Designed graphical interfaces using Grafana and PostgreSQL to visualize data and determine bottlenecks.
- Optimized Jenkins pipelines to streamline compiler testing by allowing asynchronous builds.

PROJECTS

Attendance Manager

C++, Java, SQL, Android

- Developed an Android app for attendance-taking in schools, integrating with school servers.
- App currently being used for 10,000 students during online learning and being beta tested in 10 more schools.

Real Stable Diffusion

Tensorflow, Keras, DL

- Added object detection to text-to-image AI model Stable Diffusion to filter outputs based on confidence levels.
- Integrated GPT-3 into the model for generating alternate prompts for quick iteration.

Twitter Stock Predictor

Python, NLP

- Designed a stock predictor to correlate company tweet sentiment and volume to their stocks.
- Created a graphical interface to visualize the data and results.