Aayush Gupta

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EDUCATION

Howard University - Capstone Scholar Aug. 2017
Bachelor in Computer Science; Expected Graduation: 2021
Relevant Coursework: Computer Science I, II & III, Computer Organization, iOS App Development, Discrete Structures, Linear Algebra, Artificial Intelligence

Google-Tech Exchange Program Aug. 2018 - Apr. 2019
A collaboration between Google and Howard University for a year long hands-on learning experience for students under the supervision of Google Engineers and Program Managers.
Relevant Coursework: Intro to Algorithms, Intro to Machine Learning, Software Engineering, Product Management, Data Comm and Network Programming, Intro to Cybersecurity, Operating Systems, Cloud Computing, Data Science

SKILLS

PROGRAMMING LANGUAGES: Python, C++, C#, C, Java, Swift, Go, Typescript, Javascript
DEVOPS: Docker, Kubernetes, Jenkins
TECHNOLOGIES AND FRAMEWORKS: .NET Core, NodeJS, ExpressJS, ElasticSearch, Redis

PROJECTS

Dino Run - Reinforcement Learning Model Aug. 2019 - Dec. 2019
- Designed and built a **Reinforcement Learning Mode**l to play Dino Run.
- Set up a two-way interface between the browser and the model to interact with the game.
- Set up an **Image Processing Pipeline** that takes screenshots periodically and uses **OpenCV** to resize the image which is fed into the model.
- The model was able to score in the range of 300 after training for a few days which is more than the average for a human player.

Project HU Sell Apr. 2018 - May 2018
- Collaboratively developed an **iOS** app that allows students to buy and sell used/new goods online within the university.
- Used **Swift** with Firebase on the backend to handle the **API** calls and data storage.

EMPLOYMENT

Lyft, *Software Engineering Intern - Observability*, New York June 2020 - Aug. 2020
- Designed and implemented metrics typeahead/autocomplete for the **Metrics Discovery** platform that allows users to conveniently search for the metrics emitted by their services.
- Built a **highly scalable** data indexing pipeline, **ingesting approximately 4 million metrics per minute,** to process incoming metrics and index them in an ES cluster. The indexing pipeline used **Redis** cache to ensure that documents already indexed were not getting reindexed.
- Built an **In-Memory Cache** module to further optimize the data indexing pipeline and to reduce the load on the Redis servers.
- Built an **Invalidation module** that updates the search results (in the Redis read cache) in-place in when new metrics are ingested.

Microsoft, *Software Engineering Intern - Azure Digital Twins*, Seattle, WA May 2019 - Aug. 2019
- Worked on a **POC** that demonstrates running the QueryService component of **Azure Digital Twins**, running on the cloud, as an **IoT Edge** module that allows an IoT cluster to make queries locally and perform operations when the cluster is offline.
- **Collaborated** with the different teams working on Azure Digital Twins to devise a plan to either host the dependencies on the IoT Edge device or to remove the dependencies to ensure a working PoC that demonstrates offline usage.
- Built a **service** that syncs **cosmos DB** running on the edge device with the cosmos DB in the **cloud** when the **IoT cluster** gets back online.
- Demonstrated a working **end-to-end solution** with an IoT cluster running the QueryService as an Edge module that can handle queries locally and can sync with the cloud service when the cluster comes back online.

Microsoft, *Explore Intern - Azure IoT Remote Monitoring System [Open-Source]*, Seattle, WA May 2018 - Aug. 2018
- Designed and Implemented a Notification System for the **Azure IoT Remote Monitoring System**.
- Built a highly-scalable notification module using **Azure Service Bus** that sends out emails and texts to the contact listed on the alerts.
- Wrote deployment script to deploy resources for the Notification System on **Azure**.