Aveek Duttagupta

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EDUCATION

University of Michigan, Ann Arbor — *Computer Science Engineering* SEPTEMBER 2019 - APRIL 2022 (EXPECTED)

Relevant Coursework: Accelerated Programming, Programming and Data Structures, Discrete Math, Algorithms, and Web Systems

Activities/Societies: Project Manager at Atlas Digital, Director of Consulting at MPowered Entrepreneurship, Student Founder at optimize, MProduct, Michigan Hackers, Michigan Data Science Team

EXPERIENCE

University of Michigan, Ann Arbor — *Research Assistant* SEPT 2019 - PRESENT

- Designing and implementing an alternative to cloud-based development platforms such as Kubernetes and Istio using the Google Assistant; clients would be able to set-up cloud backends solely with their voice using the Google Dialog Flow agent
    - The platform itself is constructed using a series of REST API calls using Nginx which then makes the requested modifications for the user in their project on the Google Compute Engine
    - At the moment, users can create instances, instance groups, and custom firewall rules such as https/https-2, ssh, icmp, and pop3s

HELLA, Northville Michigan — *Advanced Engineering Intern* JUNE 2019 – PRESENT

- Programming Lead for Vehicle to Vehicle (V2V) charging platform, developed a cloud-based application that communicated with Amazon Web Services (AWS) using XCode (CoreLocation, Amplify, and MapKit frameworks)
    - Utilized Amazon DynamoDB to store, push, and pull data from mobile devices on the same server
        - Users could discover each other's locations and negotiate transactions to exchange charge similar to UBER

PERSONAL PROJECTS

Autonomous Weather Rover

Built a model four-wheeled rover powered by Raspberry Pi (Sense HAT), Arduino, OpenWeatherMap and SciPy(python); software on-board is capable of getting nearby and historical weather data and then using regression-based algorithms on SciPy to make future weather predictions; utilized location-based API's to discover nearby weather data to make calculations

Wikipedia Graph Network

Created a Chrome extension for the popular Wikipedia Game. The extension is capable of taking two Wikipedia articles and finding the shortest path in-between them; used Wikipedia dumps and multiprocessing to render data usable; then implemented a custom REST API based on the a-star algorithm that would return the fastest route between the two nodes (article links) and return the path

NeoHealth Patient Database

Working at a student run startup geared towards building a patient management system for over 50 pharmacies in Nigeria. Built using the Django REST Framework, the application makes use of over 40+ custom-created REST API calls and even token authentication. The backend patient data is stored on a SQL database using AWS RDS. The application itself is built in Electron.js and has multithreading features to effectively load the application (using WebWorkers)

Financial Subreddit Analysis

Created a python script capable of scraping through various financial subreddits (such as r/investing and r/wallstreetbets) and used sentiment analysis to create real-market predictions. The predictions were created using basic Fourier transforms and compared to real-market trends

SKILLS:

- Familiar programming languages: C/ C++, Java, JavaScript (React Native), Swift, HTML/CSS, and Python
- Experienced with cloud computing software such as AWS, Google Cloud Console, Twilio, and Firebase
- Worked in App-dev in iOS/MacOS on XCode (including sharing/using Frameworks) and React Native.