Rounak Chawla

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Education

B.S. Candidate in Computer Science and Philosophy with Minor in Applied Data Science, Case Western Reserve University (CWRU), Cleveland, OH, May 2022
Specializations: Algorithms, Artificial Intelligence
International Baccalaureate, UWC Mahindra College, May 2018

Work Experience

CWRU Solar Durability and Lifetime Extension Laboratory, Research Assistant January 2021 - Present

- Contributed to an **R package** that uses **Structural Equation Modeling** to infer solar panel degradation from a number of environmental factors.
- Currently building features to ingest and query data via **Python** and **R** packages from the laboratory's **HBase** cluster using **Apache Arrow**.

LiON Care, Cleveland, OH - Co-Founder October 2020 - June 2021

- Leading a **5-person team** dedicated to building software to predictively monitor the health of lithium-ion batteries.
- Building a **Gaussian Process Regression Model** to predict battery aging using **Python sklearn** and **AWS**.
- Planning and conducting interviews with **30 prospective customers** as part of the **NSF's I-Corps Program**.

HotSpot Inc, Seattle, WA – Fullstack Intern June 2020 - September 2020

- Directed and developed a **data visualization dashboard** for timestamped capacitive sensing data, using **ReactJS, Flask,** and **matplotlib**, for an IoT appliance startup.
- Constructed an optimized **NoSQL time series data pipeline** using **AWS DynamoDB,** the **boto3** Python package, and the **AWS SDK for JavaScript.**
- Redesigned the product UI in **ReactJS** with **TypeScript** and **CSS.**

Boundary Labs, Cleveland, OH – Backend and Hardware Engineer April 2019 - November 2019

- A **Y Combinator** Winter 2020 company, Boundary Labs (now **Workbench Technologies**) was an IoT startup using edge devices for utilization and efficiency monitoring of factory machines
- Spearheaded a hardware and software solution for continuous amperage monitoring, at a rate of 2000 samples per second, using **Arduino** and multithreaded **Python** scripts on **Raspberry Pis**, and cloud storage on **Amazon S3**.
- Constructed a backend architecture and data pipeline to store and query device data (which handled data for 15 IoT devices) using **PostgreSQL**, **AWS RDS**, and **boto3.**
- Developed a data visualization module using **numpy**, **matplotlib**, and **pandas** to compute and plot machine utilization metrics, such as percent uptime and downtime for 15 different machines.
- Implemented an **Android** application in **Java** that served as a 24/7 digital endpoint for manufacturing operators, for machine status monitoring and data entry. Used on 3 machine lines.

Skylark Drones, Bengaluru, India – Drone Electronics Intern Summer 2017

- Researched the ground control systems **Mission Planner** and **MAVProxy**, and the **MAVLink protocol**, and charted improvements to the indigenous software of India's largest drone services company.
- Developed a Python script for post-processing video metadata to assist in the survey of roadways.

Awards, Projects, Activities, and Leadership

Case Western Reserve University – ThinkEnergy Fellowship August 2020 - May 2021

- Awarded a research fellowship focused on technology development, entrepreneurship, and policy in the energy sector.

CWRU Undergraduate Diversity Collaborative – Vice President of Finance April 2019 - April 2020

- Coordinated finances for over 30 different cultural and diversity student organizations on the CWRU campus