Rounak Chawla

+91 9059059687   Github: theroshoglla
rounak@case.edu   LinkedIn: rounakchawla

Education

M.S. Candidate in Computer Science Case Western Reserve University (CWRU), Cleveland, OH, May 2024
B.S. in Computer Science with Minors in Applied Data Science and Philosophy, CWRU, May 2023
Specialization: Artificial Intelligence
Major GPA: 3.0
International Baccalaureate, UWC Mahindra College, Mulshi, India, May 2018

Work Experience

CWRU SDLE Laboratory, Cleveland, OH – Research Assistant   January 2021 - Present
- Developed a package that provides a scaleable **Python** and **R** interface to the **Slurm** job scheduler, allowing users to submit fleets of machine learning jobs to a high performance computing (HPC) cluster. Enabled researchers to train up to 350,000 models in about 15 minutes.
- Building a distributed data pipeline on an **Apache Hadoop** cluster for the secure long term storage and processing of heterogeneous data and files, leveraging tools such as **Apache Ozone, Apache Spark, Apache Impala,** and **Kerberos**.
- Trained and fine-tuned deep learning models for computer vision, using the **YOLOv4** and **U-Net** architectures in **Tensorflow**. Optimized preprocessing and training for **Nvidia GPUs** using the **TensorBoard Profiler**.
- Leading the development and maintenance of the lab's HPC environment by building and deploying **Docker containers**
- Interfacing with the university's HPC team to troubleshoot bugs and outages.

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 developing 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.**
- 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   June 2017 - July 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

GraphMaster – Project   March 2023 - Present
- Developed a graph-based representation for chess games.
- Trained various Graph Neural Network architectures (**GCNs, GraphSAGE, GRCNs**) in **PyTorch** for win prediction of a chess game from a given position.

LiON Care, Cleveland, OH – Team Lead   October 2020 - June 2021
- Led a 5-person team dedicated to building software to predictively monitor the health of lithium-ion batteries.
- Built a Gaussian Process Regression Model to predict battery aging using **Python sklearn** and **AWS**.
- Planned and conducted interviews with 30 prospective customers as part of the NSF's I-Corps Program.

ThinkEnergy Fellowship – Case Western Reserve University   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