Shyam Patel

+1 Provided on Request | ✉ Provided on Request | ⌂ shyamp99.github.io | ⌥ shyamp99 | ▣ shyamp99

Experience

Meta
Feb 2024 - Present

SOFTWARE ENGINEER

- Primarily work on **unreleased devices** and other devices like **Orion**, **Ray Ban Meta** under the Wearables Audio Systems Team
- Build highly optimized features like audio state crash recovery, and adaptive volume control to meet strict requirements due to limited hardware capabilities since all of the Wearable Audio Systems Team's code lives on the wearable device
- Audio State Crash Recovery restored audio state with only few frames of interruption (generally <= 1 second) and adaptive volume control would automatically adjust volume levels based on the user's environment while they're listening to any form of audio
- Built an automated dashboard for displaying daily MCU and DSP memory usage analysis on **Ray Ban Meta** and other **unreleased devices**
- Primarily work with **C++**, **C**, **Java**, Python, **Plotly** and SQL

Cardinal Capital Management (acquired by IMC Trading)
Nov 2022 - July 2023

SOFTWARE DEVELOPER

- Collaborated with traders to build and design features for the prop shop's systems to improve both fundamental and high frequency strategies. Features/improvements would have to be capable of handling trades for strategies that can span days or nanoseconds
- Built daily report with interactive dashboards for algo and FPGA analysis. Report analyzed **100s of market updates for each of the algos' +175,000 daily attempted CBOE or CME trades**. Utilized parallel processing, to ensure completion within an hour after market close.
- Improved performance for accepting and persisting CBOE floor trades by implementing **multithreading with immutable message passing**
- Primarily worked with **Java**, **Python**, **Pandas**, **Numpy**, **Plotly** and **C++**

BNY Mellon
Aug 2021 - Oct 2022

SOFTWARE ENGINEER - INFRASTRUCTURE

- Worked on the Kafka Dev team which owned the bank's internal **Apache Kafka infrastructure as a service platform**
- Built and maintained new features while aiding in a highly reliable platform to help deploy applications handling millions of dollars
- Worked with **Apache Kafka**, **Java**, Ansible, Junit, Cucumber/Gherkin, Bash Scripting as well as other frameworks and technologies

Rutgers University
May 2020 - May 2021 (TA)
Sept. 2019 - May 2021 (I-Lab)

TEACHING ASSISTANT AND I-LAB ASSISTANT

- As TA: taught grad students the fundamentals of data science in **Python** and how to use libraries like **Matplotlib**, **Pandas** and **Numpy**
- As I-Lab assistant: taught and aided students in a myriad of topics. Some include: **Algorithms**, **Operating Systems**, **Artificial Intelligence**

LEFTE Lab
Jul. 2020 - Sept. 2020

RESEARCH ASSISTANT

- Designed, implemented and optimized both concurrent and asynchronous color image processing for CV driven drone navigation at 30 fps (the maximum frame rate of the camera on drone) using **Python**, and OpenCV

Skills

Languages	C++, Java, C, Python, Rust
Frameworks/Libraries	Numpy, Pandas, Plotly, MySQL
Technologies	Git, Docker, Linux (CentOS, Ubuntu)

Education

Rutgers University
Sept. 2017 - May. 2021

B.S. IN COMPUTER SCIENCE
New Brunswick, NJ

- Relevant Coursework: **Operating Systems**, **Algorithms**, **Internet Technology**, **Graph Theory**, **Differential Equations**, Brain Inspired Computing (Graduate), Deep Learning, Introduction to Artificial Intelligence (Graduate), Systems Programming, Discrete Mathematics and Probability

Projects

BERT-CNN-Toxic-Speech-Classifier
Dec. 2020

REPO: SHYAMP99/BERT-CNN-TOXIC-SPEECH-CLASSIFIER
Group

- Employed Google's **Bidirectional Encoder Transformation for Transformers (BERT)** architecture with a **Convolutional Neural Network** to classify online comments across 6 toxic labels: Toxic, Severe Toxic, Obscene, Threat, Insult and Identity Hate
- The model was trained using a **159,571 datapoint dataset** and achieved an **average 96.8% ROC-AUC for all labels (all labels were >93.9%)**
- Built using: **Python**, **Pytorch (with Cuda)**, **Plotly**, **Numpy**, **Pandas**, **Scikit-Learn** and Hugging Face

User Level Memory Management Simulator
Apr. 2020

REPO: SHYAMP99/VIRTUAL-MEMORY
Partner

- Designed and implemented user level memory management with a Translation Lookaside Buffer using **C Standard Library**
- Handles address translation from virtual to physical addresses, fragmentation in both virtual and physical memory and malloc/free operations