Rutvik Saptarshi

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EDUCATION

Brown University, M.S. Computer Science | *GPA:* 3.8 **Providence, RI** | *Expected: May 2023*

- *Coursework*: Software Exploitation, Cryptography, Operating Systems, Blockchain, Multiprocessor Synchronization, Networks
- Head Teaching Assistant for *Data Fluency for All* (Fall 22') – managed team of 6 TAs

Binghamton University, B.S. Computer Science | *GPA:* 3.65 **Binghamton, NY** | *Graduated: May 2021*

- Teaching Assistant for Advanced Computer Architecture (Spring 21')

WORK EXPERIENCE

PTC Inc, Software Development Intern **Foster City, CA** | *June 2022 – Aug 2022*

- Implemented user-interface features for Product Lifecycle Management SaaS platform (Arena) using ReactJS and Angular
- Participated in the complete frontend development lifecycle – design, mockups (using Figma), implementation, and testing
- Productized quick search feature for website decreasing user search time by 40% using an intuitive modern UI layout

Veritas Technologies, Software Developer Intern (Part Time) **Santa Clara, CA** | *June 2020 – May 2021*

- Designed recommendation system in an enterprise backup system, shortening support ticket resolution time by 40%
- Implemented an authenticated REST API in Golang and Node.JS to interface with MongoDB server leveraging Docker containers
- Identified parallelizable sections of the recommendation logic, resulting in 2x speedup using multithreading in Java
- Optimized hyperparameters for time series forecasting algorithm to accurately estimate disk usage in an enterprise backup system
- Increased efficiency of forecast generation and database queries by 3x using Python multiprocessing to parallelize model fitting

Green Pyramid Energy, Software Developer Intern **Pune, India** | *May 2019 – Aug 2019*

- Developed a water-level monitoring solution to log and display real-time water tank volume data for residential and industrial use
- Constructed streaming data pipeline with Apache Beam to process data from Google Pub/Sub and output to Google BigQuery
- Architectured completely automated, cloud hosted data processing pipeline decreasing operational costs by 80%

RESEARCH EXPERIENCE

Hardware Security Research Group, Research Assistant **Binghamton, NY** | *June 2020 – Aug 2020*

- Co-engineered innovative method to thwart code-reuse attacks by efficiently tracking system call invocation metadata in hardware
- Eliminated 95% of exploitable gadgets with minimal performance penalty on SPEC2017 benchmarking suite
- Paper accepted to IEEE Secure and Private Execution Environment Design '21 conference in the Memory Safety category

Energy Aware Systems Research Group, Research Assistant **Binghamton, NY** | *Dec 2019 – June 2020*

- Developed Java library (jRAPL) to access energy consumption data from the Intel RAPL counters using the Java Native Interface
- Analyzed and documented performance on multiple benchmarking suites and added support for different architectures

PERSONAL PROJECTS

Weenix OS, Systems Developer **Remote** | *Jan 2022 – May 2022*

- Implemented unix kernel from scratch: process management, device drivers, persistent storage, virtual memory
- Achieved persistent storage by integrating S5FS filesystem. Virtual memory including copy on write using shadow paging

Decolonis.zing Our Bookshelves, Full Stack Developer **Remote** | *July 2020 – Feb 2021*

- Built website using MongoDB as a datastore, Node.js (Express) API server, ReactJS for frontend, Figma for website design
- Web app developed in accordance to WCAG and hosted on Heroku cloud platform

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Tech Skills: Python, React, Node, C, Golang, Java, C++, Git, MongoDB, SQL, Neo4j, Unix system administration, AWS, GCP, Sass

Soft Skills: Conflict Resolution, Leadership, Communication, Teamwork

Languages: English, Hindi, Marathi, Gujarati