

SAI MADURI

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EDUCATION

Rutgers University

Computer Science B.S.

September 2020 – December 2023

GPA: 3.96/4.00

- Scholarships & Awards: SAS Excellence Award Scholarship, Dean's List (All Semesters), Honors CS
- Notable Coursework: Operating Systems, Distributed Systems, Systems Programming, Computational Robotics

WORK EXPERIENCE

Riot Games | Java, JUnit, Maven, Jenkins, Groovy, Proprietary Technologies

May 2023 - August 2023

Software Engineer Intern

- Revamped and enhanced the **League Platform Modernization (LPM)** team's Jenkins pipelines by adding **CI gates** and custom pre-commit scripts to lint and validate configuration changes, reducing failed service deploys by **16%**
- Established comprehensive **unit** and **integration tests** with JUnit yielding **95%** code coverage, providing clients with clear guidelines in integrating **LPM services** into their workflows to ensure reliability by validating end-to-end functionality

Twitch | Go, TypeScript, Lambda, SQS, CloudWatch, CDK

September 2022 - January 2023

Software Engineer (Contract)

- Created a library of reusable **TypeScript CDK components** to allow engineers to peer Virtual Private Clouds (VPCs) across accounts and regions to ensure simplicity and security best practices in Twitch's Video Infrastructure organization
- Implemented a **feature-flag** based traffic shift mechanism to route 100% of YouTube Exporter jobs to the new **IVS workers** (see below) over a 5 day period, recording metrics and alarms in a CloudWatch dashboard to analyze service and user behavior
- Deployed the new exporter globally and executed the traffic shift, exporting over **10,000 videos** from Twitch to YouTube daily

Amazon Web Services (AWS) | Go, ECS Fargate, SQS, CloudWatch, CDK

June 2022 – August 2022

Software Engineer Intern

- Prototyped the Amazon Interactive Video Service (IVS) YouTube Exporter post-processing worker's new architecture from AWS Batch to ECS Fargate using **Go** and **Typescript** to decrease costs and increase scalability, improving worker throughput by 12%
- Built out robust and scalable CDK infrastructure to support the product, including CloudWatch alarms, **metrics**, and **log queries** to flag and identify unexpected behavior and **ECS auto-scaling** to scale the service to match user behavior in real-time

Bloomberg LP | Python, Locust, TypeScript, React, D3.js, SQL

May 2021 – August 2021

Software Engineer Intern

- Engineered a parallelized user-friendly product with **Python** and **Locust** to load test **internal APIs**, eliminating the need to write, package, and deploy testing code, leading to a **33%** decrease in load testing time and **37%** increase in load testing coverage
- Architected a **KPI Dashboard** to provide usage statistics and deliver performance metrics for **650+** **APIs** and services across **6 internal engineering organizations**, utilized by **80+** active monthly users resulting in a **2.8%** decrease in service downtime

Bloomberg LP | Python, PyTest, Proprietary Technologies

June 2020 – September 2020

Software Engineer Intern

- Designed and implemented a lightweight **Python micro-service** to quickly retrieve **IRD calculations** for the Bloomberg Terminal's Yield and Spread Analysis (YAS) page, removing legacy dependencies and reducing average user loading time by **12%**
- Provided users with a simplified, consistent **Python library interface** to interact with internal and external ticketing systems, allowing engineers to write automation scripts to raise alerts and create Jira tickets **67%** faster

PROJECTS

Multithreaded Trading Engine | Java, Spring, JUnit

- Designed and created a **multithreaded** trading engine with **Java Spring**, capable of handling real-time order processing via HTTP requests and matching/order execution through the use of robust **data structures** and **FIFO** and **Pro Rata** algorithms
- Conducted stress tests on the order book and engine to precisely quantify performance, finding averages of **0.54 microseconds** per order book update and **5.37 microseconds** per engine update over a **1 million** order load

Augmented Reality Sudoku Solver | Python, OpenCV, TensorFlow, Sklearn

- Developed an AR Sudoku Solver using **Python**, enabling real-time overlay of solutions onto video feeds of Sudoku boards
- Employed **TensorFlow** and **Sklearn** to train a custom model capable of recognizing Sudoku digits with **97%** accuracy; utilized **OpenCV** to extract and overlay digits on the scanned grid, successfully identifying individual cells and their contents

Remote Object Store | Java, Maven

- Conceptualized and implemented a remote object store, enabling efficient data storage through **client-server** communication
- Developed support for seamless **PUT**, **GET**, **REMOVE**, and **LIST** operations and corresponding server responses with Java
- Constructed a custom, lightweight protocol over **TCP/IP** for data transfer to minimize latency and maximize data throughput

SKILLS

- Programming Languages: Java, Python, Web (HTML/CSS/JavaScript/TypeScript), C, C++, Go, SQL
- Frameworks/Technologies: Git, JUnit, Spring, Flask, Pytest, Locust, React, Node.js, Unix, D3.js, Matplotlib
- Developer Tools: Amazon Web Services, Jenkins, IntelliJ, Docker, Visual Studio Code, Eclipse, Postman, MacOS