

Shishir Iyer

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EDUCATION

B.S. - Computer Science, UC San Diego - GPA 3.87

September 2021 - March 2025

Relevant Coursework: Advanced Data Structures, Theory of Computation, Algorithm Design / Analysis, Database System Principles, Deep Learning, Programming Languages, Computer Architecture, Robot Systems Design, Operating Systems, Computer Security, Compiler Construction, Parallel Computing, Intro to Cryptography, Data Centers, Computer Vision

SUMMARY

- Backend developer at Intuit, specializing in infrastructure
- UCSD CS alumni, driven and passionate about building robust, high-performance systems.
- Over 6 months of experience in the industry with a focus on tackling complex, interdisciplinary projects
- Known for a hands-on approach and an eagerness to innovate, with a solid foundation in core CS principles and a strong drive to develop impactful solutions and push technological boundaries
- I solve complex customer problems, targeting outcomes, while constantly honing my skills & craftsmanship

SKILLS

Python (Pytorch, Pandas, Numpy, Matplotlib) • Java (Spring, Mockito) • Javascript • C / C++ (CUDA, MPI, SIMD vectorization) • Bash • REST APIs • Linux • SQL • Neo4j / Cypher • DynamoDB • AWS Cloud Infra

EXPERIENCE

Backend Software Engineer 1, Intuit

March 2025 - Present

- Worked on the AWS infrastructure for a massive self-hosted Neo4j database (>350M nodes, >4.6B edges)
 - Performed regular infrastructure maintenance and worked on the upgrade to a completely new, more optimized stack
 - Conducted extensive performance tests for different instance types
- Developed data pipelines to prune unnecessary edges from the database
 - Added functionality to query S3 analytics dumps to reduce live DB reads
- Technologies: Java, Neo4j, Bash, Linux, AWS Cloudstack, S3, Gatling, Kafka, Flink

CSE Tutor, UC San Diego

September 2024 - December 2024

- Worked as a tutor for CSE 127 (intro to computer security) at UC San Diego
- Held weekly office hours to help students debug projects and offer more explanation on course content
- Proctored in-class exams

Cybersecurity Engineering Intern, Intuit

June 2024 - August 2024

- Continued development on the generative AI reviews for security assets (see below)
 - Utilized prompt engineering to refine LLM responses for a given user prompt
 - Made backend processing asynchronous, improving API response times by over 20x

[LinkedIn](#)

[Medium](#)

[Github](#)

[Website](#)

- Enhanced unit tests for the review portal backend, increasing the code coverage by 50%
- Further improved the GenAI recommendation workflow with RAG, reducing token usage by 90%
- Technologies: Java, Spring, GPT

CSE Tutor, UC San Diego

March 2024 - June 2024

- Worked as a tutor and grader for CSE 120 (principles of operating systems) at UC San Diego
- Held weekly office hours to help students debug projects and understand course content
- Proctored and graded in-class exams

Software Engineering Intern, Intuit

June 2023 - September 2023

- Developed a data ingestion pipeline for automating security asset reviews with generative AI
 - Past security review JIRA tickets are used as training data, which get queried using AWS Athena by an AWS Lambda function and stored in a DynamoDB database
 - Data is then sent to a Vector DB where it can be ingested into the LLM
- This project aims to increase coverage of low to medium risk assets by 60%
- Technologies: Java, Spring, DynamoDB, AWS Lambda

PROJECTS

MBX - Paesani Research Group

February 2024 - Present

- Optimized the computation for the 3-body water polynomial in MBX by modifying the file with scripts
 - Vectorized the code with SIMD instructions
 - Improved memory usage with liveness analysis and redundant computation removal, resulting in a 6.9x speedup for the polynomial computation
 - Collaborated on the latest MBX software release paper detailing these improvements to the MBX suite: <https://go.shr.lc/4fOPZk3>
- Currently working on a rewrite of the particle mesh Ewald sum computation of MBX to make use of vectorization and parallelism and reduce memory overhead
- Technologies: C++, Python

Flap.js

January 2023 - March 2024

- Team lead and maintainer for Flap.js, an open source web-based JFLAP clone developed by UCSD students used to design finite state automata
- Added support for Moore and Mealy machines and developed an automatic graph layout algorithm
- Technologies: Javascript

AWARDS AND HONORS

Intuit Scholarship Recipient

May 2021 - Present