Shishir Iyer - Aspiring developer in parallel computing & machine learning

Sunnyvale, CA 94087
(408)-475-3930
shishir.iyer@gmail.com

EDUCATION

B.S. - Computer Science, UC San Diego - GPA 3.90 *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, Computer Security, Graduate Operating Systems, Compiler Construction, Graduate Parallel Computing, Intro to Cryptography

SUMMARY

- Driven fourth-year CS undergrad at UCSD, passionate about building robust, high-performance systems.
- Over 6 months of experience in the industry with a focus on tackling complex, multidisciplinary projects that push technological boundaries
- 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
- I target outcomes when solving complex customer problems while constantly honing my skills & craftsmanship.

SKILLS

Python(Pytorch, Pandas, Numpy, Matplotlib) • Java • Mockito • Javascript • React • Node.js • C / C++ • CUDA C++ • MPI • SIMD vectorization • Bash • REST APIs • Linux • SQL • DynamoDB • Spring

EXPERIENCE

CSE Tutor, UC San Diego

September 2024 - December 2024

- Working 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

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
- 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%

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
- Helped proctor and grade 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%
- Made UI enhancements to the review portal by adding views for future dashboards and content

Software Development Student Assistant, Scripps Institute of Oceanography

February 2023 - Present

- Worked on CoralNet, a platform that automatically annotates coral reef images using deep learning
    - Developed Pytest unit tests for Matplotlib analyses of training data
    - Designed user-friendly improvements and optimizations for the platform, such as an improved map view and displaying more information about data sources on the front page

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
    - These improvements resulted in a 6.9x speedup for this part of the code, with further improvements planned
- Publication currently in progress detailing these improvements to the MBX suite
- 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
- Currently developing an automatic graph layout algorithm
- Technologies: Javascript

Minecraft Mapper

September 2021 - December 2021

- Developed a plugin for Minecraft to generate a to-scale model of the Earth
    - The plugin uses GEBCO bathymetry data for terrain
    - The PRISM API is used to generate realistic biomes
- This plugin can be used to explore the geography of many different areas around the world through Minecraft
- Technologies: Java

AWARDS AND HONORS

Intuit Scholarship Recipient

May 2021 - Present