Shishir Iyer

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EDUCATION

B.S. - Computer Science, UC San Diego *September 2021 - June 2025*

Relevant Coursework: Advanced Data Structures, Theory of Computation, Algorithm Design and Analysis, Database System Principles, Deep Learning, Programming Languages, Computer Architecture, Robot Systems Design, Computer Security, Graduate Operating Systems, Compiler Construction, Graduate Parallel Computing

INTERESTS

I am currently a third year undergraduate student at UC San Diego studying computer science. My interests include backend engineering, operating systems, and machine learning, and I have also recently started learning more about embedded systems. I enjoy working on challenging projects at the forefront of different disciplines.

SKILLS

Java • Javascript • React • Node.js • C / C++ • CUDA C++ • Python (Pytorch, Pandas, Numpy, Matplotlib) • Bash • Rest APIs • Parallel Computing • Linux • System Verilog • Haskell • SQL • DynamoDB • Spring

WORK EXPERIENCE

Cybersecurity Engineering Intern, Intuit

June 2024 - Present

- Continuing development on the generative AI reviews for security assets
    - The current task involves prompt engineering to refine LLM responses for a given user prompt
    - Calls to the LLM's API will later be integrated into the backend of the security review portal

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
    - This data will then be 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 security asset review portal by adding more views for future dashboards and content in the portal

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 vectorizing the code, speeding up the computation by over 100%
- Technologies: C++

Flap.js

January 2023 - Present

- Current 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

Spotify Analysis

August 2022 - September 2022

- Created a website for visualizing audio analysis statistics from users' top 50 Spotify tracks
    - The website uses the Spotify API to determine statistics such as danceability, energy, and happiness of the tracks and displays them in a tabular format
    - This data is also shown in a histogram form using d3.js
- Technologies: Node.js, Express JS, d3.js

Minecraft Mapper

Sep 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