Aayush Joshi

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Education

California Polytechnic State University, San Luis Obispo — San Luis Obispo, CA
Bachelor of Science in Computer Science — *Sep. 2021 – June 2025*
Grade: Third Year Student, GPA: 3.6

Relevant Coursework: Database Systems, Software Engineering, Systems Programming, Design and Analysis of Algorithms, Object-Oriented Programming, Computer Organization, Discrete Structures, Data Structures

Skills

Programming Languages: C/C++, Java, Python, JavaScript, RARS (RISC-V), HTML
Developer Tools: Linux/Unix, Jupyter Notebooks, VS Code, Git
Soft Skills: Collaboration, Communication, Leadership, Problem Solving, Critical Thinking, Strategic Planning

Experience

Software Engineering Researcher — August 2023 - Present
California Polytechnic State University — *San Luis Obispo, CA*

- Collaborated with **Dr. Louise Edwards'** team to develop computational techniques to determine age, the assembly history and star formation histories of galaxies that will be collected from **Legacy Survey of Space and Time** completed by the **Vera C. Rubin Observatory**
- Utilized **SQL** techniques to explore, retrieve, and manage extensive data sets containing crucial information about billions of extragalactic objects for in-depth **data analysis**
- Optimized program flow by utilizing **Numpy** and **Pandas** libraries to develop a **fully automated pipeline** for efficient **data processing**, storage, and retrieval based on input parameters
- Improved space and time complexity by **30 percent** through optimizing over **4000 lines of code** by eliminating redundancies, implementing **data structures** and improving code documentation for **code readability**
- Documented crucial insights from tutorials and research papers for **improving code performance** and assisting in **report documentation**

Projects

AI in Healthcare | *Javascript, GPT-3, AWS DynamoDB, Github* — December 2023 - January 2024

- Contributed to the development of a **full-stack application** for Noor Clinic, streamlining patient registration and providing doctors with automated information summaries and diagnostic recommendations
- Achieved revamped patient care by implementing **GPT-3 generative AI through rest API** to analyze and summarize patient information
- Optimized treatment efficiency by providing healthcare professionals with concise insights about the patients, and **basic diagnostic recommendations** through GPT-3
- Enhanced scalability and flexibility in **managing large datasets** through the integration of **AWS DynamoDB**
- Achieved fast and responsive performance provided by **NoSQL DynamoDB** database, ensured enabling efficient data modification and retrieval with low-latency access and seamless AWS ecosystem integration

Computer Networking | *Unix, C, Github* — December 2023

- Engineered an **HTTP server** for **TCP request** handling and integrated a **database handler** that communicated with the server via **UDP connection**
- Ensuring seamless **handling of multiple concurrent requests** from clients by developing a responsive **multi-threading server**
- Optimized code structure by dividing command-specific tasks into separate functions, fostering a streamlines and **well-organized program flow**
- Enhanced database system efficiency by implemented a strategic combination of **Hashmap and Skip-List** for efficient data retrieval and modifications
- Ensured data integrity by implementing **thread locks**, allowing only one process at a time to communicate with the database