SHAHMUN JAFRI

shahmun.z.jafri@gmail.com • shahmun.com • https://www.linkedin.com/in/shahmunjafri/

Mathematics-Computer Science student at UC San Diego with a strong foundation in computer systems, electrical engineering principles, and applied research. Experienced in system-level programming in C/C++, embedded systems with Arduino, and low-level memory management. Designed custom hardware-software solutions, including a superheated plasma device and a custom memory allocator. Adept at PCB-level thinking, debugging, and collaborating across hardware/software boundaries. Passionate about building high-performance systems and contributing to next-generation computing hardware through hands-on engineering and rigorous analysis.

EDUCATION

UNIVERSITY OF CALIFORNIA, SAN DIEGO **San Diego, CA**
Bachelor of Science, Mathematics-Computer Science June 2026
Relevant Coursework: System Programming and Software Tools, Data Science and Optimization, Machine Learning, Data Science in Practice, Graph Theory and Combinatorics, Advanced Data Structures and Algorithms, Abstract Algebra

SKILLS

Operating Systems: Windows, macOS, Linux
Languages: C++, C, Java, Python, HTML, CSS, Javascript
Developer Tools: Valgrind, Git, Github, Vim, VS Code
Software Tools: React.js, Next.js, Prisma, Node.js, Docker, PostgreSQL, Seaborn, Matplotlib, Numpy
Soft Skills: Customer service, user support, team collaboration, communication
Certifications: Stanford Machine Learning Certification

RELEVANT EXPERIENCE

Software Engineering Intern **Sunnyvale, CA**
Inprintz June 2025 – Present

- Designed and implemented a PostgreSQL database using Prisma ORM to digitally manage and track orders, replacing a paper-based system.
- Containerized the database with Docker for streamlined deployment and scalability.
- Integrated barcode generation and scanning functionality that links each order to its digital record for easy retrieval.
- Built and connected backend services using Next.js, enabling real-time updates on order statuses including *placed*, *in progress*, *ready*, *paid*, and *cancelled*.
- Improved operational efficiency by digitizing workflows, reducing manual errors, and centralizing order tracking.

Undergraduate Researcher **San Jose, CA**
Zaidi Lab, SJSU July 2023 – July 2024

- Engineered a superheated plasma device powered by Arduino to effectively treat avulsion and chronic wounds, achieving a 15% reduction in dependency on medical resources.
- Reduced size of program by 30% allowing less storage and less computations per second.
- Increased Energy efficiency by 25% by creating an aircooled aluminum radiator for the machine.
- Patient testing has shown bedsores have healed faster with less chance of infection.

Lead Tutor **Sunnyvale, CA**
Mathnasium January 2023 – July 2024

- Provided personalized support to 100+ students in math disciplines, diagnosing knowledge gaps and adapting explanations to diverse learning styles—demonstrating strong problem-solving and patience in technical instruction.
- Recognized as Best Tutor for exceptional communication skills, resolving student frustrations with clarity and empathy in one-on-one and group settings.
- Collaborated with instructors to refine tutoring strategies, demonstrating teamwork and adaptability.
- Managed scheduling and progress tracking for students, reflecting organizational skills and attention to detail in administrative tasks.

PROJECTS

Southern California Wildfire Project | shahmun.com/projects/california-wildfire-project/ March 2025
Technology used: Python, Numpy, Seaborn, Pandas

- Created a data visualization of the materials and type of structures that were susceptible to burning during the Southern California wildfires.

Custom Memory Allocator | shahmun.com/projects/custom-heap-allocator/ February 2025
Technology used: C

- Implemented a custom dynamic memory allocator in C, designing “vmalloc” and “vmfree” functions to manage heap memory using a best-fit allocation policy, block splitting, and coalescing strategies.

VOLUNTEER WORK

- Volunteered at Ellis Elementary School to promote mathematics to children by leading a math lesson in class.