

Shahmun Jafri

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EDUCATION

UNIVERSITY OF CALIFORNIA, SAN DIEGO

San Diego, CA

Bachelor of Science, Computer Science, *Minor in Economics*

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.

EXPERIENCE

Undergraduate Researcher

San Jose, CA

Zaidi Lab, San Jose State University

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.

Head Math Tutor

Sunnyvale, CA

Mathnasium

January 2023 – July 2024

- Guided over 100 students across diverse math disciplines, from foundational counting to advanced multivariable calculus and statistics, earning recognition as Best Tutor for exceptional impact and highest student engagement.

President

Los Altos, CA

Foothill College

July 2022 – December 2022

- Spearheaded Foothill College's Hackathon, driving targeted outreach and engaging activities to achieve a successful turnout of over 150 participants.

Freight Associate

San Jose, CA

The Home Depot

January 2021 – July 2021

- Worked in a team of 25 to unload and organize 3000 - 4000 units of merchandise from freight trucks to the sales floor within 4 hours.

PROJECTS

Custom Memory Allocator | Developer

Link: shahmun.com/projects/custom-heap-allocator/

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.
- Used bitwise operations to manage memory block metadata, tracking allocation status, block sizes, and adjacent free blocks efficiently.

Number Recognition | Developer

Link: shahmun.com/projects/number-recognition/

Technology used: Python, Numpy, Sci-kit Learn

- Created a binary classification model by processing a dataset of 1,000 uniquely handwritten 0's and 1's by vectorizing each digit, then trained the algorithm with gradient descent, achieving a 2% error rate.

Southern California Wildfire Project | Developer

Link: shahmun.com/projects/california-wildfire-project/

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.
- Identified location as the most significant predictor of building fire risk through a random forest classifier.

TECHNICAL SKILLS

Languages:

C++, C, Python, Java, Javascript, HTML, CSS, Arduino

Developer Tools:

Git, Github, Vim, VS Code, Valgrind

Libraries:

Node.js, React.js, Numpy, Keras, Matplotlib, Seaborn

Certifications:

Stanford Machine Learning Certification

VOLUNTEER WORK

- Volunteered as a kitchen cook at SABA Center.
- Volunteered at Ellis Elementary School to promote mathematics to children by leading a math lesson in class.