Shahmun Jafri

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EDUCATION

UNIVERSITY OF CALIFORNIA, SAN DIEGO   **La Jolla, CA**
Bachelor of Science, Computer Science, *Minor in Economics*   June 2026
- Relevant Coursework: Mathematical Reasoning, System Programming and Software Tools, Data Science and Optimization, Machine Learning, Data Science in Practice, Graph Theory and Combinatorics

EXPERIENCE

Undergraduate Researcher   **San Jose, CA**
Zaidi Lab, San Jose State University   July 2023 – Jul 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.
- Designed and optimized a scalable prototype to decrease reliance on medical supplies while ensuring energy efficiency and adaptability for diverse healthcare environments.

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.
- Volunteered at Ellis Elementary School, Cupertino, CA, to promote mathematics by leading engaging classroom lessons

President   **Los Altos, CA**
OwlHacks, 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.

PROJECTS

Custom Memory Allocator | *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.

Opioid Crisis | *Tableau*
- Created a model that shows the correlation between poverty and death rate due to opioid usage, and this leveraged my skills in data science and health informatics. Mined, cleaned, and plotted over 15,000 different data points.

Number Recognition | *Python*
- 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.
- Developed efficient data storage techniques in Python while creating a handwriting number recognition algorithm.

Southern California Wildfire Project | *Python, Seaborn, Numpy, Matplotlib*
- 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.

DISTINCTIONS

Software	C, C++, Java, Python, Scikit-learn, Keras, TensorFlow, NumPy, Git, Vim, GNU(GDB), Pandas, SQL, Kaggle, Gradient Descent, Tableau, Matplotlib, Arduino, MATLAB, Valgrind, GitHub
Academic Service:	Volunteered at Ellis Elementary School to promote mathematics to children by leading a math lesson in class.
Volunteer Service:	Volunteered as a kitchen cook at SABA Center,
Certifications:	Stanford Machine Learning Certification