Sia Khorsand

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EDUCATION

University of California, San Diego | La Jolla, CA   December 2025

*B.S. - **Cognitive Science**, Specialization in **Machine Learning** & **Neural Computation***   *Cumulative GPA: 3.61*

*Minors: **Computer Science** and **Design***

Relevant Coursework: Advanced Data Structures and Algorithms, Data Science, Supervised/Unsupervised ML, LLMs.

PROJECTS

Dynamic Valet Business Management App | *(iOS, Swift UI, Firebase)*

- In the final development stages of an iOS app, currently being beta-tested for my part-time valet job, to dynamically track shifts and cars with a responsive grid layout to **boost efficiency by ~30%** and drop **error rate by ~40%.**

Employed **MVVM architecture** for data persistence, along with **Firebase** integration for user authentication.

Shape Recognition CNNs | *(Python, Tensorflow, HTML5 Canvas, Javascript, Pillow, Flask)*

- Developed a **multi-class neural network** achieving real-time shape classification with **~90% accuracy.**
- Built an **HTML5 canvas**-based UI enabling **real-time** shape **classification** with confidence scores.
- Integrated a **Flask backend** to preprocess user input and serve predictions with **75% lower latency.**

Comparative Analysis of Supervised ML Models | *(Python, Sklearn, Matplotlib)*

- Conducted a comprehensive empirical analysis comparing **Random Forest**, **SVM**, and **Logistic Regression** across three binary-class datasets from the UCI ML Learning Repository.
- Fine-tuned hyperparameters using **GridSearchCV** and performed 10-fold cross-validation to optimize performance.

Analyzed models' performance on metrics such as accuracy and log loss across different train-test splits.

Interactive Pathfinding & Maze Solver | *(R, dplyr, PyGame)*

- Built a real-time visualizer for **BFS**, **DFS**, **A*, Dijkstra's**, and more.
- Designed interactive **maze generation** with guaranteed solvability.
- Optimized **animations and retro UI** for an intuitive learning experience.

EXPERIENCE

Instructional Apprentice | La Jolla, CA   Sept 2024- Present

UC San Diego - Department of Cognitive Science

- **Facilitated COGS 10 studios** for **100+ students,** discussing real-world applications of technology/cognitive science.
- Collaborated with renowned cognitive science professor**, Jim Hollan,** in **devising and grading projects/homework**.
- **Facilitate COGS 150 discussions** on **LLMs**, multimodal cognition, AI ethics, and their societal impact.
- Assist in grading, developing coding labs and assignments, and refining materials.

SKILLS & TECHNICAL TOOLS

Machine Learning/Data Science: EDA, Wrangling, Feature Engineering, Neural Networks, Evolutionary Algorithms, Clustering, Classification, Reinforcement Learning

Software Engineering: OOP, Data Structures and Algorithms, Time Complexity Optimization, Dynamic Programming

Tools/Technologies: Numpy, Pandas, Matplotlib, Pytorch, Pygame, Tensorflow, Sklearn, Flask, SwiftUI, FireBase, Git.

Additional Skills: UI/UX Design, User Research, Agile/Scrum, Adobe CC, Figma