

Seema Rida

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EDUCATION

University of California San Diego, La Jolla, CA

Expected Graduation 2026

- *B.S. in Cognitive Science Spec. Machine Learning and Neural Computation, Minor in Computer Science*
- *Relevant Coursework: Advanced Machine Learning, Advanced Data Structures, Brain-Computer Interfaces, Neural Signal Processing, Supervised Machine Learning, Neuroanatomy, Linear Algebra*
- *Awards: UC Scholar, Provost Honors*

TECHNICAL SKILLS

- **Programming:** Python (Pandas, NumPy, Scikit-Learn, PyTorch, Matplotlib, Neurokit2), Java, C, Git/GitHub
- **Data Analysis & ML:** PCA, Logistic Regression, KNN, SVM, RNNs (LSTM, GRU), EEG/Biosensor Pipelines
- **Signal Processing & Systems:** Biometric Analysis (PPG, EDA, HRV), Lab Streaming Layer (LSL), Embedded Systems, Network Config (PTP, Dante, Managed Switches), Data Acquisition & Pipeline Automation

WORK EXPERIENCE

Research Assistant, UCSD Cognitive Science Department, La Jolla, CA

October 2024 - Present

- Engineered a multimodal classroom sensing system integrating cameras, microphones, EEG, and biosensors; configured networked data infrastructure using Layer 2–4 switches, Precision Time Protocol (PTP), Dante audio routing, and Lab Streaming Layer (LSL) for precise time-synchronization
- Develop and maintain EmotiBit biosensor pipelines, including device setup, microSD configuration, data acquisition, Python tools for parsing, signal cleaning, IMU-based movement thresholding and artifact detection, automation scripts, and visualization to generate analysis-ready datasets
- Contribute to ongoing system refinement, improving time-synchronization, updating firmware, maintaining hardware, and developing Python scripts for improved data acquisition, analysis, and automation

UC Scholar Researcher, UCSD Undergraduate Research Hub, La Jolla, CA

June 2025 - August 2025

- Played a central role in a naturalistic classroom study, overseeing EmotiBit setup, synchronization, and data quality assurance; developed LSL event-marking and automated archival scripts for multimodal dataset integration
- Developed preprocessing pipelines for HRV, PPG, EDA, and IMU signals, implementing artifact removal (bang detection, movement thresholding), signal cleaning, and automated visualization to generate analysis-ready datasets
- Wrote a technical methods paper and presented findings at the UC San Diego Summer Research Conference on multimodal physiological signal integration, artifact correction, and analysis for biobehavioral phenotyping.

Data Science Intern, Abwaab, Amman, Jordan

August 2024 - December 2024

- Collaborated with Learning and Data Science teams to model and predict student performance; conducted feature engineering on course engagement and assessment data
- Identified key behavioral metrics to improve learning outcome and retention predictions

PROJECTS & EXTRACURRICULARS

Tritons Prosthetic Society, Co-President

May 2025 - Present

- Lead a multidisciplinary student team in prosthetic design and human-centered engineering; organized workshops, training, and projects while coordinating sponsorships and partnerships

Zebrafish Neural Activity Analysis

March 2024 - Present

- Analyzed larval zebrafish brain activity using Python (pandas, NumPy, scikit-learn), applying PCA, k-means clustering, and Iterative Coarse Graining to classify neural groups and reveal multi-scale spatial organization

EEG Attention Analysis

January 2025 - March 2025

- Designed and conducted EEG experiments using OpenBCI hardware; preprocessed data with Python (bandpass filtering, epoching), applied frequency-domain analysis, and identified attention-related brainwave patterns

Comparing Supervised Learning Algorithms

September 2024 - December 2024

- Built and evaluated logistic regression, KNN, and SVM classifiers on Iris, Wine, and EMG datasets; used cross-validation, confusion matrices, and visualizations to analyze accuracy and F1-score tradeoffs