MAURO MALEKSHAMRAN

mauromalek.com **mauromalek1@gmail.com** **760-537-9726**

Computer science student with a focus on data science and machine learning, experienced in multiple programming languages and problem-solving. Skilled in collaborating with teams to deliver technical solutions, with a strong commitment to continuous learning and professional growth. Proven ability to support others in developing their skills through mentorship and teamwork.

TECHNICAL SKILLS

Programming Languages: Python, C++, SQL, Matlab, Kotlin, Assembly
Software: Visual Studio Code, Eclipse IDE, Unreal Engine, Android Studio, Emacs
Operating Systems: Linux/Ubuntu Server, Windows 10/11, FreeRTOS (researched)
Data Technologies: SQL, Scikit-learn, Pandas, Numpy
Other Skills: Git/GitHub, Bash, PowerShell, Debugging, Technical Writing, Data Visualization, Linux Command Line, Data Analysis, Machine Learning (basic), Cryptography, Cross-Platform Development, Statistics, Problem-Solving, Web Scraping, Linux & SQL (Google), Tensorflow, Keras, Python for Data Science, AI & Development (IBM), Cybersecurity Certificate (Coursera)
Experience With: AWS, Google Cloud, Hadoop, Apache Spark, Microsoft Azure, IBM Cloud, PyTorch, Data Science Methodology, Java

EDUCATION

California State University San Marcos - B.S. Computer Science - 3.7 GPA **05/2025**

PROJECTS

Football Match Event Analyzer, Programmer (solo project) **03/2025**
- Developed a football analysis system using Python, YOLOv8 (Ultralytics), and OpenCV to detect players, fine-tune on custom datasets, and extract jersey colors with KMeans clustering.
- Used optical flow to estimate camera motion, map player positions, and measure speed and distance covered on the field

Snake AI with Deep Q-Learning, Programmer (solo project) **02/2025**
- Developed a reinforcement learning agent to master Snake using PyTorch, implementing experience replay, exploration/exploitation strategies, and a neural network model.
- Built a custom game engine in Pygame and visualized training progress with live performance plots.

Pathfinder Visualizer, Programmer (solo project) **01/2025**
- Developed an interactive Pygame application visualizing A*, Dijkstra's, BFS, and Bellman-Ford algorithms on weighted grid mazes.
- Enabled real-time simulation, obstacle/weight customization, and algorithm selection via GUI menu for educational purposes.

NutriSnap Desktop App, Programmer (team of 4) **12/2024**
- Developed a food recognition and nutrition app using Java, SQL, and APIs to retrieve USDA data.
- Designed to provide real-time nutritional information based on camera-based food identification.

TCP Chat Room Application, Programmer (solo project) **11/2024**
- Developed a Python-based multi-client chatroom using TCP sockets and Tkinter, enabling real-time text/file communication across clients.
- Implemented server-side broadcasting and client-side image handling to ensure synchronized chat updates and display for all users.

Tesla and GameStop Stock Data Analysis, Data Analyst (solo project) **10/2024**
- Developed a Jupyter Notebook using Pandas and Plotly to analyze Tesla and GameStop stock and revenue trends, creating visualizations to highlight key financial patterns.
- Cleaned and structured raw financial data for time-series analysis, identifying trends in historical price and revenue changes.

Pseudo-Japanese Translator Project, Programmer (team of 2) **08/2024**
- Built a parser and translator in C++ using a stack and parsing table for grammar processing and syntax validation.
- Implemented a DFA-based lexical scanner to tokenize pseudo-Japanese words for syntactic analysis.

EXPERIENCE

Software Engineer Intern, EcoVivarium **02/2025 - Current**
- Designing a scalable backend using Firebase, PostgreSQL and Cloud Functions, integrating authentication, APIs, and storage.
- Creating a cost-efficient serverless architecture with Firebase Hosting, to optimize database queries and reducing operation costs.

Vice President, LeetCode Club, CSUSM **12/2024 - Current**
- Leading problem-solving sessions to enhance algorithmic thinking and coding proficiency.
- Collaboratively organizing programming events and fostering a helpful learning environment.

STEM Success Center Tutor, California State University San Marcos **10/2024 - Current**
- Provide one-on-one help in math and computer science to boost student understanding and confidence in STEM courses.
- Teach key computer science classes while encouraging critical thinking and hands-on learning techniques.

Computer Science Teacher, Rock Creek Education Center **01/2023 - 08/2024**
- Developed curriculum and taught fundamental programming concepts to K-9 students through interactive projects.
- Created a supportive learning environment, encouraging exploration in Python and Java programming.

LANGUAGES

English: Native proficiency **Spanish:** Native proficiency **French:** Basic proficiency (studied independently)