Cristian A. Espinosa

cristian.espinosa889@gmail.com Github LinkedIn Personal Website

Objective

Graduated from the University of California, Merced with a Bachelor of Science in Computer Science and Applied Mathematics. Experienced in machine learning, data analysis, web development, and database management. Former Math Tutor and Captain of Yamabuki Taiko Club, demonstrating strong teamwork, problem-solving, and leadership skills. Seeking a job opportunity to leverage my technical & soft skills to solve real-world problems collaboratively.

Education

Universidad de Guadalajara — *Jalisco, Mexico (Online)*

- *Masters in Data Science & Engineering* — *Jan 2025 - Present*

University of California, Merced — *Merced, CA*

- *Bachelor of Science, Computer Science & Engineering* — *Aug 2019 - May 2024*
- *Bachelor of Science, Applied Mathematical Sciences (Data Science emphasis)* — *Aug 2019 - May 2024*

Experience

University of California, Merced - Carreira-Perpiñán Lab — *Merced, CA*

Volunteer Application Developer — *Jan 2024 - May 2024*

- Collaborated with the lab Professor and a graduate student to develop interactive React web application for visualizing classification decision trees in two dimensions as an aide for teaching Machine Learning at UC Merced
  - Implemented Decision Tree and Random Forest algorithms in JavaScript, including axis-aligned and oblique splitting criteria

OMRON Inc. (Capstone Project) — *Merced, CA*

Computer Vision Engineer — *Jan 2024 - May 2024*

- Co-developed Anomaleaf, an end-to-end mobile app to detect leaf anomalies, with a student team and OMRON Inc. mentor.
  - Trained multiple Convolutional Neural Networks (CNNs) in Python to classify leaf anomalies and performed model selection
  - Performed background removal on image dataset to improve the model classification accuracy
  - Final product was presented at Innovate To Grow (I2G) conference at UC Merced

University of California, Merced - Summer Undergraduate Research Institute — *Merced, CA*

Undergraduate Researcher — *Jun 2023 - Aug 2023*

- Under supervision of professors and graduate students from the mathematics department, researched the feasibility of using synthetic data to train Convolutional Neural Networks (CNNs) to overcome data scarcity
  - Built a Generative Adversarial Network (GAN) through PyTorch to synthesize face emotion images
  - Evaluated classification accuracy of real vs synthetic CNN image models using a confusion matrix, precision and recall
  - Showcased research findings at UC Merced's Summer Research Symposium through a poster presentation

Lawrence Berkeley National Laboratory - Joint Genome Institute — *Berkeley, CA*

Data Science Intern — *Jun 2021 - Aug 2021*

- Identified root-colonizing viral genes in Arabadopsis Thaliana's genome and quantified those genes that are required for this plant's growth
  - With mentor support I calculated a fitness score of the plant's viral genes to identify which of those genes promote its growth
  - Performed data visualization through Python's Matplotlib, revealing 40% of viral genes are crucial for the plant's growth

Personal Projects

Financial Assistant: Cloud-based LLM Web App for Personal Finance Management | — *August 2025 - Present*

- Presently building a full-stack React + Flask web application to assist with personal finance management
- Integrated the Gemini API to provide personalized budget planning recommendations for improving monthly savings
- Currently developing an interactive Chart.js dashboard to visualize spending trends and category distributions for better financial insights.
- Built a Flask server to process and analyze user finance data through Python, and Pandas, enabling accurate budget tracking and reporting.

Airline Market Fare Regression: Linear Regression Model for Predicting Airfares | k — *May 2025*

- Built a linear regression model to predict airline ticket prices using Airline Market Fare dataset in Kaggle
- Evaluated model accuracy using R^2 score and Mean Squared Error (MSE); visualized residuals for error diagnostics and outlier handling
- Implemented Forward Feature Selection to reduce features from 25 to 3 with no loss in R^2, improving model interpretability and runtime.

MusicPie: Full-Stack Web App to Recommend Music | — *Aug 2022 - Dec 2022*

- Developed and launched MusicPie, a Flask-based website that recommends music based on the user's facial expression
- Trained a custom-built Convolutional Neural Network (CNN) with TensorFlow & OpenCV to classify 7 face-emotions
- Managed website's backend through SQLite & Python to store music data and prevented SQL Injection attacks by limiting user input

Skills

Technical	Python, SQL, JavaScript, HTML, Machine Learning, Deep Learning, Data Analysis, Front-End, Back-End, Troubleshooting
Soft	Team Building, Attention to Detail, Problem-Solving, Effective Communication, Interpersonal Skills, Ethics, Fast Learner
Leadership	STEM Tutoring, Taiko Club Captain, Peer Mentor
Languages	English (Native/Fluent), Spanish (Native/Fluent)