Oscar Manuel Arenas

South Gate, CA 90280 | 323-816-1368 | oscararenas625@pm.me | LinkedIn | GitHub | My Website

About

Computer Science graduate student with experience in data science, statistics, AI agents, and software engineering. At NNSA, I developed an ontology visualization tool for the Data Science portfolio to identify gaps in AI research. At USC ICT, I evaluated the performance of multiple LLMs on K–12 science English text translation into Spanish, building AI agents, applying statistical analysis, and measuring grade-level readability to assess translation quality.

Education

M.S. in Computer Science, California State University, Long Beach — Expected: May 2026
B.S. in Computer Science, California State University, Long Beach — May 2024

Experience

AI Research Intern — *Los Angeles, California*
USC Institute for Creative Technologies — *2025 – Present*

- Curated and statistically analyzed K–12 English science text datasets to evaluate LLM translation performance, showing that meaningful insights can be drawn from small but representative samples
- Developed Python scripts to compare untargeted vs. grade-targeted Spanish translations, introducing a retry AI agent that improved grade-level alignment accuracy by up to 10%
- Benchmarked ChatGPT-4o, Gemini, Cohere, and LLaMA-3.x models using Spanish readability metrics (Szigriszt-Pazos, Fernández-Huerta) to validate educational appropriateness of translations

Data Science Intern — *Remote*
National Nuclear Security Administration — *2024 – 2025*

- Interned at the NNSA Defense Nuclear Nonproliferation R&D office supporting the Data Science portfolio
- Created an ontology focused on Trustworthy, Effective, and Deployable AI (TED-AI) using Python to better characterize current focus areas, opportunities, and potential gaps for DNN R&D
- Developed a general-purpose VS Code extension for uploading and visualizing structured datasets using D3.js to explore the TED-AI ontology; implemented using Test-Driven Development (TDD)
- Built an AI agent utilizing an AI ontology to evaluate research documents related to DNN R&D, leveraging Python LangChain libraries and various LLM models to assess ontology effectiveness

Physics Tutor — *Remote*
Cerritos College — *2019 – 2020*

- Provided individual and group physics tutoring to undergraduates at Cerritos College, primarily focusing on PHYS 101 and PHYS 201, to strengthen students' understanding of fundamental and advanced physics concepts
- Assisted students in preparing for exams by offering problem-solving techniques, conducting thorough reviews of key concepts, and providing practice problems to build confidence
- Enhance comprehension, making complex topics like mechanics and thermodynamics easier to understand

Personal Projects

AI-Agents Pong Game *(Python, Typescript, Flask)* — *Mar–Apr 2024*

- Built a VS Code WebView Pong game with both paddles autonomously controlled by AutoGen agents.
- Managed real-time canvas rendering and agent messaging with Pydantic schemas.
- Wrote Playwright tests for launch, gameplay, and scoring to ensure functionality.

Skills

Languages: Python | JavaScript | Java | R | Typescript
Tools: Git | Jira | Docker | Flask | Azure (AI Foundry)
Coursework: Machine Learning | AI | Algorithms
Libraries: TensorFlow | SciPy | Scikit-Learn | NumPy | Pandas

Scholarships

- **James D. Woolever CIS Scholarship**, Cerritos College Foundation
- **Nega Family Scholarship for Students in Technology**, Cerritos College Foundation
- **STEAM Scholarship Award**, presented by Neudesic