DIEGO PEDROZA

LinkedIn - DiegoPedrozaP | GitHub - Diego5936 | (954) 248-9468 | diegoapedrozap@gmail.com

EDUCATION

University of Central Florida
B.S. Computer Science, *Minor in* Intelligent Robotic Systems — *Expected Graduation:* Summer 2026

Coursework: Data Structures and Algorithms, Computer Logic and Organization, Object-Oriented Programming
Awards: University of Cambridge's AICE Diploma, Florida Academic Scholars Award, UCF's Dean's List S24/F24/S25

SKILLS

Frameworks: TensorFlow, PyTorch, scikit-learn, React, Node.js, FastAPI, Unity, ROS
Languages: C, C#, C++, Java, Python, TypeScript, PHP, SQL, Monkey C, Bash
Tools: REST APIs, WebSockets, Google ADK, Docker, AWS Lightsail, Git, Jupyter Notebook

WORK EXPERIENCE

Pheratech Systems | Neural Systems Intern — **Jan. 2025 – May 2025**

- Collaborated with a multidisciplinary team to develop robotic vehicles that use decentralized AI and Computer Vision models with real-time data processing and telemetry solutions to enhance autonomous navigation
- Led development of vehicle simulations in **Unity** to validate concepts and create immersive presentations for stakeholders
- Engineered adaptive AI models within an integrated **Unity-Python** framework, applying reinforcement learning techniques and algorithms, such as **PPO**, to optimize performance
- Initiated development of a custom **LLM** aimed at enhancing the interpretation and utilization of complex data

PROJECTS

HotDog – Multi-Agent LLM-Controlled JetBot — **Aug. 2025 – Nov. 2025**

- Collaborated with 4 other engineers to build an autonomous robot on the **NVIDIA Jetson Orin Nano + JetBot platform**, integrating motor control, ultrasonic sensors, and camera
- Built a **multi-agent LLM** command layer (Director / Observer / Pilot) so users could issue vague natural-language goals that were turned into objectives and label sets, enabling generalized behavior without hard-coded routines.
- Implemented a **FastAPI + WebSocket** backend to stream **YOLOE** detections and telemetry to a **React/Next.js + Tailwind** frontend for real-time control, monitoring, and goal issuing

Theta Tau Chapter Website - ucfthetatau.org — **Apr. 2025 – Aug. 2025**

- Architected and building a full-stack application with the **PERN** stack for deployment on **AWS LightSail**
- Designed a public-facing view where students interested in our co-ed engineering fraternity may learn more about our chapter, our recruitment, and our philanthropy efforts
- Secured the site with a whitelist-only login system for brothers, providing access to exclusive chapter resources and features

Strata: Neuro-Evolution of Augmenting Topologies Implementation — **Dec. 2024 – Jan. 2025**

- Implemented the **NEAT** algorithm from its research paper in **C#** and **Unity**, applying variable topology to simulated agents
- Created "Strata", where agents in diverse environments and identical reward systems evolve different patterns of behavior
- Analyzed learning patterns and emergent behaviors, visualizing data using **Python** and **Matplotlib**

INVOLVEMENT

UCF Theta Tau | Developers Committee Project Manager — **Jun. 2025 – Present**

- Founded the committee to centralize fraternity projects, providing resources and ensuring sustainability
- Directing the development of main projects, such as the chapter website, by defining goals, deadlines, and delegating tasks
- Managed progress of projects using **Trello** for task management and coordinating all team communication through Slack

UCF Theta Tau | Academic Board Lead — **Aug. 2024 – May. 2025**

- Communicated effectively with board and organization members to plan events and provide academic support
- Hosted workshops and established a tutor system, offering personalized assistance to ensure academic success
- Developed a web scraper, using **Playwright**, to automate study room reservations, securing consistent access to study spaces

UCF IEEE - Knight Lights | Member — **Aug. 2023 – Jul. 2024**

- Collaborated in a student team to design and execute a drone-based light show, aiming to innovate traditional visual displays
- Contributed to the development of simulation software, enhancing the coordination and communication of the drone swarm
- Assisted in the integration of LED and battery systems with drones alongside a team of **17** engineers, focusing on maximizing visual impact and energy efficiency