

Manuel Branco Nardi

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EDUCATION

Bachelor of Computer Science

May 2028

University of Central Florida

GPA: 3.9

Relevant Coursework: Computer Science II, Intro to machine learning, System Software

Orlando, FL

Associates of Arts

May 2024

Broward College

GPA: 4.0

Honors/Awards: Broward College Presidents list

Davie, FL

PROJECTS

Project Kestrel | Python, Gazebo, ROS

Aug 2024 – May 2024

- Led the Simulation team for an autonomous drone project using the SORT multi-object tracking algorithm to follow multiple moving targets
- Directed the Simulation team and built a custom environment to test drone tracking behaviour.
- Developed and integrated a real-time tracking system to follow multiple moving targets.
- Collaborated with subsystem leads to ensure seamless drone integration and system performance.

LLM lightshow Hackathon Project | C, ESP-IDF, Python

Oct 2025 – Oct 2025

- Implemented dual-ESP32S3 architecture for audio FFT preprocessing and real-time on-device LLM inference.
- Trained a compact model mapping frequency features to LED states for fast embedded generation.
- Developed ESP-IDF firmware driving 74HC595 shift registers for synchronized AI-controlled LED effects.
- Built a full embedded ML pipeline from dataset creation to optimized C/C++ inference deployment.

3D Horror Video Game | Unity

Jan 2026 – Apr 2026

- Developed a full video game with a team of 5 people for a video game class
- Built the AI mechanics for the enemies and the loading and storing system for checkpoints
- Designed the video game concept idea, and organized and planned team meetings

Autonomous Driving Context Analysis | Python, Lingua Franca, Hugging Face

Jan 2026 – Mar 2026

- First authored a reviewed paper accepted at the ReCPS workshop, DATE 2026 conference
- Designed and implemented a reactor-based pipeline enforcing deadline timing constraints for driving tasks
- Calibrated a structured VLM prompt to generate scene descriptions, hazard identification, and recommended driving actions from camera images
- Benchmarked two vision-language models on driving scenarios, measuring various latency metrics

PUBLICATIONS

Nardi, M. B., Avalos, D., Zhao, G., Ibanez Peredo, M., & Lee, C. (2026). Runtime Autonomous Driving Context Analysis using Vision Language Model and Lingua Franca. ReCPS Workshop, DATE 2026 Conference.

Languages | Python, JavaScript, Arduino, C/C++, SQL, HTML, CSS, PHP, Java, C#, TypeScript

Frameworks/Libraries | Django, ROS, Langchain, Langgraph, Pandas, NumPy, Matplotlib, TensorFlow, jQuery

Developer Tools | Git, Docker, Visual Studio Code, JIRA, Excel

Certifications | Microsoft Word 2019, Microsoft PowerPoint 2019, QuickBooks Desktop

Soft Skills | Teamwork, communication, leadership, critical thinking, adaptability, proactiveness

Languages | Spanish, English