LUCIANO DAGNILLO

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Professional Summary

Master's student in Electrical and Computer Engineering with robust experience across interdisciplinary projects, including embedded systems, renewable energy solutions, robotics, artificial intelligence, and optical communications. Demonstrates strong proficiency in programming (C/C++, Python, MATLAB), hardware integration, and signal processing, coupled with practical experience in semiconductor processes, photonics, and advanced machine learning. Passionate about leveraging technological advancements in electric vehicles, automation, and sustainable systems, with proven collaborative skills in academic instruction and industry internships. Adept at analytical problem-solving, system-level design, and translating complex concepts into actionable solutions.

EDUCATION

M.S. Electrical and Computer Engineering — University of Arizona, Tucson, AZ
Expected Graduation: Dec 2025 | GPA: 3.86

B.S. Electrical and Computer Engineering, Minor in Mathematics
University of Arizona, Magna Cum Laude, May 2024 | GPA: 3.77

Relevant Coursework: Digital Control Systems, Analog & Microelectronics, Embedded Systems, Computer Architecture, Circuit Theory, Optical Communications

WORK HISTORY

Graduate Grader — University of Arizona, Tucson, AZ
Aug 2024 – Dec 2024

- Supported a senior-level communications systems course, clarifying complex topics like modulation, Fourier analysis, and signal filtering during office hours
- Evaluated projects involving AM/FM, signal bandwidth, and spectral efficiency—providing exposure to RF signal processing fundamentals

Electrical and Computer Engineering Intern — DEPCOM Power, Inc., Scottsdale, AZ
May 2023 – May 2024

- Collaborated on solar inverter systems, performing data-driven root cause analysis to improve power subsystem reliability.
- Used MATLAB, Python, and Excel to automate configuration testing and analyze inverter failures.
- Prepared system validation reports and ensured compliance with operational safety standards.

Undergraduate Teaching Instructor — University of Arizona, Tucson, AZ
Jan 2022 – May 2022, Jan 2023 – May 2023

- Delivered hands-on instruction in C programming to classes of 30+ students, emphasizing systems thinking and debugging techniques
- Taught data structures and pointer manipulation, laying a foundation in low-level software relevant to embedded systems

PROJECTS

Analog Electronics Design

- Designed and tested a mixed-signal amplifier using SPICE simulation and oscilloscope validation; tuned for signal integrity and gain performance.

Embedded Automation Systems

- Automatic Sprinkler System: Designed and integrated I2C/SPI sensors into Arduino-based environmental control system; implemented logic for real-time actuation and data acquisition.
- Laser Pointer Robot: Developed real-time control firmware for motor-guided tracking system using feedback loops; implemented serial-based telemetry for debugging. Demonstrated integration of sensing, actuation, and control principles applicable to automated biomedical devices.

Software Development and Simulation

- Perio-Dx Mobile Application: Co-developed biological diagnostic mobile app using Kivy and Firebase, incorporating data capture and GUI elements for health monitoring—early exposure to clinical-use tech workflows.
- **Benchmark Contamination in LLMs** Surveyed and implemented contamination detection algorithms on LLMs using AIME-2024 and MMLU benchmarks to assess memorization in Qwen-14B and Skywork-8B models using PyTorch

SKILLS

Relevant Technical Skills

- Programming: C, C++, Python, MATLAB, Bash
- Embedded Systems: Arduino, RTOS (intro), Linux CLI, Device Driver Basics
- Hardware Interfaces: SPI, I2C, GPIO
- Tools & Debugging: Oscilloscope, Logic Probes, Multimeter, Serial Monitor, SPICE
- Version Control & CI: Git, PlatformIO, Firebase, Shell Scripting

Soft Skills: Technical writing, cross-functional collaboration, systems thinking