

Matthew Luna

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Education

Florida Institute of Technology, BS in Computer Engineering May 2025

- **Relevant Coursework:** Computer Architecture, Computer Design, Microcomputer Systems, Digital State Machines, Circuit Theory, Electronics, Computer Communications, OS Concepts, Soft/Hardware Integration
- **National Honors Society:** Phi Eta Sigma National Honor Society

Projects

LASER, Senior Research Project Sept 2024 - Apr 2025

- Designed and simulated a diode-pumped solid-state laser (DPSSL) system that achieved a projected 30–50% increase in efficiency over traditional flash lamp systems.
- Created a stable optical cavity using cavity stability equations, and 3D-printed a custom YAG laser mount, reducing component costs by 40%.
- Ensured full compliance with ANSI, OSHA, and Florida Class 4 laser safety standards while managing a sub-\$600 budget for diode and lens procurement.

MIPS ISA Single-Cycle Processor Design Sept 2024 - Dec 2024

- Designed a MIPS ISA single-cycle processor in Vivado, including ALU control unit, PC register, and data memory.
- Implemented 10 core instructions, including arithmetic/logical, memory access, and control transfer, using a custom data path and control path microarchitecture.
- Validated RTL design with simulation and waveform analysis in Vivado, emphasizing embedded systems timing and logic behavior.

Top-Down RPG Game Sept 2024 - Dec 2024

- Developed a 2D top-down game in Unity inspired by Pokémon, featuring turn-based combat.
- Programmed player character selection between 2 unique characters with 3 battle scenarios and applied basic enemy AI behavior.
- Utilized Unity's scene management, animation, and UI systems to create a playable game prototype with polished mechanics in under 10 weeks.

Work Experience

Work Study, Florida Tech All Faiths Center – Melbourne, FL Aug 2024 – May 2025

- Managed and coordinated the setup of 10+ monthly church events, ensuring all logistical and operational details were handled efficiently.
- Organized and maintained church records, such as event attendance and program schedules, ensuring they were accurate and easily accessible.
- Welcomed 100+ visitors monthly, answered phone calls, and addressed inquiries with professionalism and kindness, promoting a positive and welcoming environment.

Girls JV Soccer Coach, MCC High School – Melbourne, FL Sept 2023 – Jan 2024

- Coached and developed 15 high school athletes by fostering technical skills, sportsmanship, and strategic understanding of the game.
- Delivered individualized feedback during practices and matches to support player improvement and confidence.
- Created weekly practice sessions with drills, conditioning, and tactics to promote long-term player growth.

Technical Skills

Technologies: Multisim, Vivado, Docker, Raspberry Pi, Arduino IDE, TinkerCAD, Microsoft Excel, Microsoft Word

Languages: C++, C, VHDL, Python, MATLAB,