AMARNATH S. PATEL

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EDUCATION

University of Central Florida **Undergraduate Student**

Photonics Science and Engineering, Computational Physics August 2025 - Present

- Pursuing double major in PSE & Computational Physics
- Relevant Coursework: Geometric Optics, Modern Physics

Florida Atlantic University **3.71 GPA**

Computer Science coursework - High School Diploma (108 Credit Hours) August 2021 - May 2025

- Background in Embedded Systems, UNIX systems, Web Development, AI/LLMs
- Relevant Coursework: Data Structures and Algorithms, Computer Logic Design, Matrix Theory, C & C++ programming, Deep Learning, Computer Architecture, Calculus I-III, Differential Equations

SKILLS

Programming Languages: C/C++, Rust, Zig, Verilog, Shell (Fish, Bash, tcsh)

Tools & Frameworks: Nix, Helix, Docker, Git, AI-LLMs, Rustup, CMake, Proxmox

Operating Systems: Linux Distributions, BSD, Windows, OpenSolaris

PROFESSIONAL EXPERIENCE

UCF Astrophotonics Lab - Undergraduate Researcher August 2025 - Present

- Developing software for control systems and data acquisition for optical instrumentation and astronomical applications under Dr. Eikenberry spanning Photonics & Physics departments.

IEEE UCF CPU Project - Kernel Development Team Member August 2025 - Present

- Developing kernel-level software for RISC-V CPU built from scratch, porting Doom and Quake to custom hardware architecture with 40 other members.

Teaching Assistant - Employee August 2024 - May 2025

- Assisted 70 undergraduate students with learning calculus. Part-time position (10h/week).

Advanced Experimental Vehicles - Programmer, Leader, Builder November 2023 - May 2025

- Developed Electron app using Raspberry Pi 5 for monitoring and controlling solar car systems
- Won 2nd Place in Division and Lockheed Martin Award for "Highest Level of Engineering Excellence" with 20 other people.

FAU Grant-Funded AI Safety Research Project January 2024 - March 2025

- Developed AI/LLM powered research project for writing, grant funded by Florida Atlantic University with HPC access with 5 members.

PROJECTS

UniUtils October 2023 - November 2024

- Schedule generation tool for students with classroom finder functionality. 1st Place at Night Hacks 2023 hackathon, submitted to ShellHacks

limebar December 2024 - March 2025

- Lightweight Wayland status bar inspired by lemonbar with stdin-based block parsing, customizable geometry, fonts, colors, and alignment using cairo/pango rendering with xdg-shell and wlr-layer-shell protocols