

Aryan Thakur

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EDUCATION

UNIVERSITY OF FLORIDA, HERBERT WERTHEIM COLLEGE OF ENGINEERING Gainesville, FL
Bachelor of Science in Computer Science Expected May 2029
GPA: 3.96 | Junior by credits
Coursework: Data Structures and Algorithms, Advanced Programming Fundamentals, Applied Discrete Structures, Intro to Computer Organization, Computational Linear Algebra, Introduction to Probability

RESEARCH EXPERIENCE

FOCUS LAB, UNIVERSITY OF FLORIDA Gainesville, FL
Undergraduate Researcher January 2026 – Present

- Built higher-throughput hardware-control and acquisition software for an Optical Binary Convolutional Neural Network (BCNN) research system, coordinating dual-DMD pattern control, event-camera capture, and experiment logging.
- Rebuilt legacy DMD control workflows in Python, turning manual setup into CLI-driven orchestration with preview, capture, runtime health checks, and debug tooling.
- Implemented hardware sequencing for projected-pattern experiments, covering LUT setup, trigger configuration, external-lock checks, and runtime validation.
- Added manifest-driven timing sweep tooling that reuses one camera session across sweep rows, flushes stale event batches, validates triggers, and writes per-run artifacts.
- Created paired-DMD pattern generation and browser preview tools for A/B layouts, calibration frames, diagnostic patterns, and kernel-mask sequences.

PROJECTS

WHIRLWIND 2026
Personal Project – Desktop Productivity App

- Built Whirlwind, a Tauri + React desktop productivity app with focus sessions, goal tracking, Microsoft To Do / Graph API sync, and SQLite-backed local state.
- Designed task and focus workflows across React views, Tauri/Rust backend commands, and local SQLite persistence to keep planning data available across synced and offline workflows.

LEADERSHIP

DREAM TEAM ENGINEERING Gainesville, FL
Researcher and Project Captain September 2025 – Present

- Lead an 8-student biomedical engineering project team collaborating with UF Shands on an active design project.
- Helped finalize a Unity mixed-reality simulator for caudal block training at CSSALT lab / UF Shands; developing a PyTorch CT-to-MRI prototype for DBS pre-operative planning using Brown Bridge Diffusion / CT2MRI-style unpaired image translation on HiPerGator.

TECHNICAL SKILLS

Languages:	Python, C++, TypeScript, Rust
Frameworks / APIs:	React, Tauri, PyTorch, OpenCV, NumPy, Microsoft Graph
Systems / Tools:	Linux, Git, Bash, SQLite, pytest, PyUSB, HiPerGator, Unity
Focus Areas:	Hardware-control software, data acquisition, computer vision workflows, experiment automation, testing and logging

HONORS AND AWARDS

Florida Bright Futures Scholarship; AI Test Plan Generator Hackathon, 2nd Place, Aeronix / IGNITE at UF, 2025; Herbert Wertheim College of Engineering Dean's List, Fall 2025, Spring 2026