

Pranav Vishwas

608-421-8316 | vishwas@wisc.edu | dpeiw.github.io | github.com/DPEIW

EDUCATION

University of Wisconsin–Madison
B.S. Electrical and Computer Engineering

Madison, WI
Sep. 2025 – May 2028

One World International School

International Baccalaureate Diploma Programme | HL: Math AA, Physics, Chemistry

Bangalore, India
2023 – 2025

EXPERIENCE

Electrical Engineer – Wisconsin Racing, Formula SAE

Electrical Subteam

Madison, WI

Sep. 2025 – Present

- Designed and iterated a pitot tube data acquisition system (DAQ) PCB in Altium Designer, performing PCB layout and hardware validation across two revisions (SMD DLVR → through-hole DLHR sensors) following aerodynamic specification changes; integrated analog signal conditioning and ESP32 ADC interfaces, improving sensor debugging efficiency.
- Designed a resistor-based timing circuit for embedded systems applications in vehicle electronics, performing circuit analysis, component selection, and bench-level functional validation to ensure timing accuracy and reliability.
- Assembled and routed vehicle wiring harness sections, ensuring signal integrity and power distribution reliability under mechanical and packaging constraints.
- Assembled 2 of 10 high-voltage battery modules and completed SMD soldering, PCB population, and electrical validation for four boards across aerodynamics and power electronics subsystems, contributing to system-level integration readiness.

ICTS Bangalore – Astrophysics Relativity Group

Research Job Shadow

Bangalore, India

May 2024

- Applied signal processing techniques to LIGO gravitational-wave datasets, developing Python-based analysis workflows and producing a technical report documenting methodology and results.

TECHNICAL PROJECTS

Casio FX-CG50 Li-Po Charge Modification | *Altium, Power Electronics, Circuit Design*

Nov. 2025

- Designed and implemented a custom PCB replacing AAA batteries with a USB-C rechargeable Li-Po system integrating charge/protection ICs, voltage regulation, and power management circuitry; validated through hardware testing and enclosure integration while maintaining original form factor.

PC Performance Optimization & Hardware Refurbishment | *Diagnostics, Benchmarking*

Sep. 2025 – Present

- Optimized desktop systems via component selection, benchmarking, overclocking, and undervolting, improving thermal efficiency and sustained performance under load (reduced thermal throttling).
- Diagnosed and refurbished malfunctioning laptops through full hardware teardowns and component-level replacement; restored a ThinkPad X1 Carbon using donor components.

Home Server & Virtualization Lab | *Proxmox, Docker, Linux*

May 2025 – Present

- Designed and deployed a self-hosted server infrastructure running NAS and containerized services using Docker and Proxmox VMs, reducing dependency on external cloud services and improving system control and latency.
- Deployed and optimized local LLM inference pipelines on Apple Silicon and NVIDIA GPUs using LMStudio and Ollama, achieving sub-second inference latency for productivity workflows.

Heatsink Airflow Optimization – IBDP Extended Essay | *ANSYS Fluent, CFD*

2024 – 2025

- Designed and conducted controlled thermal experiments alongside ANSYS Fluent CFD simulations to analyze airflow and heat dissipation; achieved strong correlation between experimental data and simulation models.

Personal Portfolio Website | *HTML, CSS*

May 2024

- Developed and deployed a personal engineering portfolio website to document technical projects, system designs, and hardware builds.

TECHNICAL SKILLS

Programming: Python, Java, Bash, LC3, L^AT_EX

Embedded & Hardware: PCB Design, PCB Layout, Circuit Analysis, Embedded Systems Design, Altium Designer, SMD Soldering, Microcontrollers, Arduino, ESP32, Raspberry Pi

Simulation & CAD: ANSYS Fluent, Fusion 360, Blender

Systems & DevOps: Linux, Windows, MacOS, Docker, Proxmox, SSH, Networking, **AI:** LMStudio, Ollama Local LLM

ACTIVITIES

Endurance Cycling: Completed 200 km Brevet (Audax Club Parisien); consistent long-distance training demonstrating endurance and discipline

Strength Training: 3+ years of structured resistance training

YouTube (DPEIW): Produced technical engineering content demonstrating hardware builds, system design, and debugging workflows – youtube.com/DPEIW