

Vivek Matta

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EDUCATION

Northwestern University • *M.S., Computer Engineering* **Expected Jun 2026**

- Specialization: Internet of Things & Edge Computing
- Relevant Coursework: Microprocessor Systems, Design and Verification with FPGAs, Electronic System Design I & II
- GPA: 4.0/4.0

Purdue University • *B.S., Computer Engineering, Minor in Mathematics* **Aug 2021 – May 2025**

- Relevant Coursework: Embedded Systems, Digital Systems and Design, Advanced C Programming
- Awards and Honors: Dean's List (Fall 2021)

WORK EXPERIENCE

Embedded Software Engineer Intern • *Cambridge Mobile Telematics* **Jun 2025 – Aug 2025**

- Co-developed a benchtop shake table for accelerometer and IoT hardware validation, implementing low-level embedded C firmware to generate deterministic 0–3200 Hz vibration profiles using hardware timers
- Led a cross-functional team during a company-wide hackathon; solution placed 2nd out of 45 teams

Software Engineer Intern • *Cambridge Mobile Telematics* **Jun 2024 – Aug 2024**

- Supported IoT fleet monitoring infrastructure by integrating communication APIs and building operational monitoring tools.

PROJECT EXPERIENCE

Embedded Webcam PCB Design • *Electrical Engineering Project, Northwestern University* **Jan 2026 – Present**

- Designed a compact 2-layer embedded webcam PCB in KiCad by developing schematics and performing full board routing, producing a manufacturable board that met strict mechanical and layout constraints.
- Created custom schematic symbols and PCB footprints from datasheets while integrating camera interface circuitry, multi-rail power regulation, programming headers, and debug interfaces to ensure electrical compatibility.
- Generated manufacturing-ready Gerber files and validated ERC/DRC checks, ensuring fabrication compliance and assembly accuracy.

DIY “Bop It!” • *Embedded Systems Project, Northwestern University* **Sep 2025 – Dec 2025**

- Developed a real-time sensor-driven embedded system on the Micro:bit using GPIO and I²C interfaces to integrate multiple sensors, including a rotary encoder, IMU, microphone, and flex sensor.
- Optimized sensor polling, debouncing, and state-machine logic to achieve low-latency input validation and reliable hardware-software interaction.

Embedded Systems Design Lead • *Team 15 – Notiphones, Purdue University* **Jan 2025 – May 2025**

- Designed an ESP32-S3 wearable haptic headphone module by developing system schematics and integrating power, BLE communication, motor drivers, and RGB LED control circuitry.
- Led hardware bring-up and schematic validation, troubleshooting cross-team integration between ML wake-word detection and hardware interfaces.

SoCET Project • *System-on-Chip Daughter Board Design & PCB Development* **Sep 2024 – Dec 2025**

- Designed a compact 2-layer M.2 daughter board integrating power regulation, clock generation, memory, and USB-UART interfaces for SoC bring-up.
- Created custom M.2 connector symbols and footprints from datasheet specifications, ensuring correct pin mapping and mechanical compliance.
- Validated SPI, UART, and I²S interfaces using ERC analysis, signal direction validation, and datasheet cross-verification to prevent interface mismatches.

TECHNICAL SKILLS

Hardware & Systems: PCB Design (KiCAD, Eagle), Embedded C, C/C++, Microcontrollers (ESP32, STM32), SystemVerilog

Software & Tools: Python, Java, Swift, SQL, Git, MATLAB