Vivek Matta

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EDUCATION

Northwestern University • *M.Eng., Computer Engineering* **Expected June 2027**

- Specializations: Semiconductors, IoT & Edge Computing
- Relevant Coursework: Solid State Electronic Devices, Internet-of-things Sensors and Systems, Microcontroller System Design

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

- Relevant Coursework: Microprocessor Systems and Interfacing, Embedded Systems, Digital Systems and Design, Advanced C Programming, Python for Data Science, Signals and Systems
- Awards and Honors: Dean's List (Fall 2021)

EXPERIENCE

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

- Co-developed a benchtop shake table for internal testing of accelerometers and IoT devices, designing and programming embedded C firmware to generate vibration profiles from 0 Hz to 3200 Hz, enabling precise validation of motion-sensitive hardware.
- Built a Python tool for real-time logging and visualization of acceleration data, reducing test iteration time by 40% and improving debugging efficiency across engineering teams.
- Developed HIL routines to simulate sensor inputs and validate control loops, increasing firmware reliability.

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

- Integrated Twilio and ConnectedU APIs to ingest LTE usage data for 12,000+ SIMs into Amazon Redshift (5 GB/day).
- Built Tableau dashboards and operational alarms, cutting anomaly response time by 50%.
- Automated data pipelines using AWS Lambda and Terraform for real-time monitoring and scalability.

PROJECTS

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

- Designed and fabricated the response module PCB for a wearable alert system, integrating a PWM-driven vibration motor, RGB LED indicators, and a USB-C power circuit.
- Assembled and tested the board using multimeters and oscilloscopes to validate signal timing, current draw, and system safety; coordinated with ML and comms teammates to ensure integration.
- Programmed ESP32-S3 in Embedded C for GPIO feedback and BLE-triggered vibration under 1s latency.

SoCET Project • *System-on-Chip Design and PCB Development* **September 2024 – January 2025**

- Designed and developed PCB layouts for testing and demonstrating System-on-Chip (SoC) prototypes, ensuring efficient power distribution and signal integrity for recent IC designs.
- Wrote and tested SystemVerilog modules for RISC-V SoCs; validated functionality and reliability using PDB debug workflows.

TECHNICAL SKILLS

Programming Languages: Python, C/C++, Java, Embedded C, SystemVerilog, RISC-V Assembly, Swift, HTML, SQL
Technologies & Tools: AWS, Lambda, Git, Redshift, KiCAD, Eagle, MATLAB, Tableau, Jira, Confluence