Pranav Mehta

(949) 929-3938 | p3mehta@ucsd.edu | linkedin.com/in/pranmehta/ | github.com/DaPhysikist | Portfolio: pranavmehta.com

Education

University of California, San Diego – M.S. Computer Engineering | B.S. GPA: **3.93** **Expected Graduation:** June 2026

Awards and Honors: Henry Booker Award (ECE B.S. honors), IDEA scholar, member of Tau Beta Pi and Eta Kappa Nu

Skills & Relevant Courses

Languages: C, C++, Python, Java, Go, Rust, x86/ARM Assembly, SystemVerilog | **Scripting:** CMake, Bash | **Certs:** CompTIA Network+
Software: Git, Linux, Docker, Xilinx Vitis, FreeRTOS, Android Studio, Arduino, LTSpice, EAGLE/Fusion360, MATLAB, Wireshark
Hardware: Soldering, PCB Design, Oscilloscope, Signal Generator, Multimeter, Logic Analyzer, RF Power Meter, Spectrum Analyzer
Courses: Data Structures & Algorithms, Operating Systems, Wireless Embedded Systems, Signals & Systems, Computer Architecture, Digital Circuits

Work Experience

Modem Firmware Intern | Qualcomm Inc. **June 2025 - Sept 2025**

- Developed a C++ model for modem firmware test platform that tests PHY layer functionality shared between **5G NR** and 4G/LTE
- Produced documentation to aid future additions and eventual consolidation of cellular PHY functionality into a single model

Embedded Software Engineer | AquaMesh (startup) **Feb 2024 - Present**

- Developed a **React Native** application used to set up and configure ESP32-based water quality monitoring devices over **WiFi**
- Constructed a data pipeline from nodes to AWS, utilizing a custom **LoRa** mesh messaging scheme, **Protocol Buffers**, and **MQTT**
- Developing a **multi-tenant AWS** backend, utilizing Control Tower, Amplify, AWS IoT for device management, and DynamoDB

Embedded Software Intern | MITRE Corporation **June 2024 - Aug 2024**

- Developed tracking software for a secure **GPS receiver** prototype and tested on **Xilinx FPGA** hardware
- Produced technical documentation used to train team members on how to set up and deploy on a Xilinx testing environment

Research & Other Experience

Technical Chair | IEEE Student Branch @ UC San Diego **June 2024 - June 2025**

- Hosted technical workshops open to all students, covering electrical engineering and computer science concepts such as soldering, PCB design, **systems programming with Rust,** and making an ESP32-based music streaming device
- Advised the Robocup team on embedded systems design, with a focus on power efficiency improvements

Undergraduate Researcher | Wireless Communications, Sensing, and Networking Group @ UC San Diego **Oct 2023 - March 2024**

- Developed configurable **LoRa** mesh network for research & industry using low-cost Adafruit Feather boards
- Researched creating a low-cost private **5G cellular** network using COTS equipment and open-source RAN software for transmitting data from a mobile vehicle

Embedded Lead / Embedded Member | Triton Robocup, IEEE Student Branch @ UC San Diego **Oct 2022 - June 2024**

- Spearheaded the assembly of soccer-playing robots and led the embedded team at UCSD's first Robocup competition in Germany
- Implemented a **PID control loop** on STM32 updated via UART commands and enabled holonomic movement for precise control of the robot using the **CAN** protocol

Software Lead / Software Member | Yonder Deep **Oct 2022 - Present**

- Yonder Deep pursues engineering projects for climate change research with researchers from the Scripps Institute of Oceanography
- Enhanced vision and communication system by integrating specialized underwater cameras for obstacle detection and a **WiFi Halow**-based network bridge to provide a high bandwidth link, with successful video streaming from the onboard Raspberry Pi to the base station GUI achieved during the latest pool test
- Developed a Python module for the **Raspberry Pi** to process encoded NMEA strings from an onboard **GPS** sensor and AHRS data from a 9-DOF IMU sensor, enabling pose estimation

Projects

ShutEye [GitHub] **Jan 2025 - March 2025**

- Built an energy-saving smart home system consisting of an iOS app built in **Swift**, a Python-based web/data server, and Tapo smart plugs connected over WiFi to a custom IoT device leveraging **BLE beacons**, **Ultra-wideband**, and ultrasonic sensors

YouLostIt [GitHub] **Sept 2023 - Dec 2023**

- Developed a real-time, power-efficient **Bluetooth tracker** device using an STM32 that sends BLE packets to nearby phones
- Designed bare-metal drivers in C for the GPIO and Timer peripherals, communicating with the accelerometer sensor using **I2C**, and communicating with the **Bluetooth Low Energy** chip using **SPI**