Ishan Deshpande

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EDUCATION

UT Austin

B.S. in Electrical and Computer Engineering **May 2025**
M.S. in Electrical and Computer Engineering (Spec. Embedded Systems) **May 2026**
3.79 Undergraduate GPA
Relevant Coursework: Embedded Systems Lab, Compilers, Operating Systems, Digital Logic Design, ML/HW Codesign, Computer Architecture, Algorithms, Data Science Lab, Software Design & Implementation I/II, RTOS

EXPERIENCE

Meta Reality Labs **May 2025 - Aug 2025**
Embedded SWE Intern *Pittsburgh, PA*
- Built a Python assembler, emulator, and verifier for a custom state machine and instruction set, boosting development speed and reliability.
- Integrated ultrasonic, radar, and IMU sensors into a real-time headset pipeline, enabling advanced multimodal sensing.

Tesla **May 2024 - Aug 2024**
Body Controls Firmware Intern *Palo Alto, CA*
- Enhanced future firmware reliability by implementing tooling PC-Lint for static code analysis on Renesas microcontroller
- Assessed non-volatile memory usage across all body control modules by introducing CAN logging for EEPROM usage
- Improved vehicle performance by fixing various bugs and implementing features related to sensor calibration and interfacing (mirror heaters, trailer brake sensors, overhead lights, door actuation)

Garmin **May 2023 - Aug 2023**
Flight Control Systems Firmware Intern *Olathe, KS*
- Accelerated aircraft control module testing by writing a Python SIL simulation for vertical navigation and altitude tracking
- Optimized flight control module performance by developing HIL unit tests in C within an RTOS environment

University of Texas at Austin **Jan 2023 - Present**
Operating Systems TA *Austin, TX*
- Enhance understanding of OS concepts for 70+ students through effective instruction
- Improve project outcomes by debugging issues in User Programs, Virtual Memory, and Filesystems with PintOS

Embedded Systems Tutor
- Elevated students' understanding of embedded systems by teaching key concepts such as interrupts, DAC/ADC, finite state machines, and serial communication, resulting in improved project performance and comprehension

ACTIVITIES AND PROJECTS

Longhorn Racing Solar Car **Sept 2021 - Present**
Platform Team Lead
- Improved robustness of on-vehicle firmware updates by developing a UART/CAN bootloader (custom linker script and flash memory driver)
- Increased remote testing accessibility by designing a 12V/100W power supply PCB featuring USB-C Power Delivery

Controls Team Lead
- Programmed in an RTOS context for our platform of STM32 microcontrollers (display, motor controller)
- Managed a team of 12 through a traditional software workflow with Git/GitHub

UT Embedded Systems Lab Design Competition - 3rd Place **Apr 2024**
Embedded Software Engineer
- Collaborated with a team of 4 to develop a GameBoy emulator on a TM4C microcontroller
- Designed a circuit board in KiCAD and worked with protocols such as SPI/QSPI and 16-bit parallel

UT Real-Time Operating Systems Graduate Project **Apr 2025**
Embedded Software Engineer
- Interfaced with a Wifi-Ethernet bridge chip and wrote MAC, IP, UDP, ICMP, ARP, and DHCP drivers from scratch
- Demonstrated functional ping and netcat implementations on an RTOS

Skills: C, KiCAD, Python, Verilog, Vitis HLS, Kernel Development, Application Development for RTOS, Linux, Git, Docker, AWS, Java
Interests: Table Tennis, Music Production, Piano