

Ishan Deshpande

EDUCATION

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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

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

EnergyX

May 2022 - Aug 2022

Automation and Controls Intern

Austin, TX

- Optimized the lithium extraction process by programming and integrating Programmable Logic Controllers (PLCs) onto a control panel, enhancing operational efficiency
- Increased system reliability by designing, wiring, and rigorously testing a control panel to meet prototype specifications

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 Systems and Machine Learning Research

Oct 2024 - Present

Undergraduate Research Assistant

- Researching energy attribution for serverless functions in the cloud

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/C++, KiCAD, Python, Verilog, Vitis HLS, Kernel Development, Application Development for RTOS, Linux, Git, Docker, AWS, Java

Interests: Table Tennis, Music Production, Piano