

Prabesh Shrestha

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EDUCATION

B.S. Electrical & Electronics Engineering

May 2028

Texas State University – San Marcos, Texas | **GPA: 4.0**

Honors: President's Honor Scholarship, President's List, Honors College

TECHNICAL SKILLS

- Robotics Systems: **Universal Robots** (UR), UR ROS 2 driver, **ROS 2** (Humble), **OnRobot** grippers
- Embedded Systems: **Jetson Nano/Orin**, Arduino, ESP8266, ATmega328P, STM32, RP2040 (Pi Pico)
- Hardware Design: **KiCad**, **SolidWorks**, **PCB Design**, Soldering, Oscilloscope, Multimeter
- Software & Tools: MATLAB, Orca Slicer, Git, **Linux**, Neovim, **Docker**, OctoPrint
- Fabrication: 3D Printing (FDM), CNC, Laser Cutting, Arc Welding, Milling, Lathes
- Programming: C/C++, Python, **Rust**, Bash, JavaScript

EXPERIENCE

Research Assistant

Feb 2026 – Present

Ballistic Cardiogram Lab, Texas State University, San Marcos, TX

- Conduct human-subject research using **EEG** and ballistocardiography (BCG)
- Developed custom firmware for ESP based data recording system, for wireless reflash, and custom memory repartitioning.
- Redesigned schematics for data retrieval system and processed PCB manufacturing.

Makerspace Student Technician

Dec 2025 – Present

Ingram Hall Makerspace, Texas State University, San Marcos, TX

- Integrated OnRobot electric and **pneumatic grippers** with Universal Robots (UR) **industrial arms**, including IO configuration and end-effector control.
- Deployed ROS 2 (Humble) with Universal robot driver, and evaluating YOLO-based object detection.
- Built and operated a **scalable 3D-printer farm** using OctoPrint, with **Dockerized** services, custom plugins, and **secure proxying** behind university firewalls.

Electrical Lead (Industrial Team)

Sept 2025 – Present

IEEE Robotics Automation Society, San Marcos, TX

- Designed and soldered circuit boards for the MARS robot, managed all the data bus, power wiring.
- Developed custom firmware for the teensy board, and also developed ROS nodes to controls.

Product Design Lead

Jan 2025 – Jul. 2025

Wired Circuit Pvt. Ltd., Kathmandu, Nepal

- Designed and **commercialized 4 DIY robotics kits** (line follower, Bluetooth car, home automation).
- Authored 50+ pages of technical manuals for classroom deployment.
- Mentored 20+ students; 3 teams won national robotics competitions.

PROJECTS

Makerspace Autonomous Robot – IEEE RAS Industry Team

Oct. 2024 – Present

- Built a ROS 2 based autonomous robot using Jetson Orin Nano, RPLiDAR A1, and ZED 2i.
- Led hardware integration, including power distribution, motor drivers, wiring, and chassis assembly.

AgroAssist – AI-Powered Agriculture Automation Suite

Jan. 2022 – Feb 2024

- Sensor IoT network (soil moisture, temp, humidity) with live multi-node data collection.
- AWS (data processing, storage) and Azure ML (seed recommendation, plant disease detection).
- Developed an online dashboard for real-time monitoring and decision support.