

Darsh Patel

469-980-0729 | darshpatel@tamu.edu | Dallas, TX | [linkedin.com/in/darsh-patel-475830264](https://www.linkedin.com/in/darsh-patel-475830264)

EDUCATION

Texas A&M University

B.S. in Electrical Engineering, GPA: 3.923

College Station, TX

Expected May 2029

SKILLS

PCB & Power: Altium Designer, KiCad, LTspice; schematic capture, PCB layout, power distribution, isolated gate-drive circuits

Test & Embedded: Oscilloscopes, programmable supplies, electronic loads, LCR meter, soldering; ESP32, TI C2000, Raspberry Pi

Software & Mechanical: C++, Python, MATLAB/Simulink/Simscape, PlatformIO, Git; SOLIDWORKS, Fusion 360, Onshape, GD&T, FDM printing

EXPERIENCE & RESEARCH

SVTronics, Inc.

Plano, TX

Hardware Test Engineering Intern

Jun.–Aug. 2024; Jun.–Aug. 2025

- Programmed and production-tested 1,000+ PCBAs using oscilloscopes, programmable supplies, and electronic loads.
- Traced failures with schematics and datasheets, identified components for rework, and helped recover 95% of failed boards.
- Tested RF modules, motor drivers, power converters, and 30+ TI evaluation boards using load, continuity, functional, and hardware-in-the-loop checks.

Advanced Electric Machines and Power Electronics (EMPE) Lab

College Station, TX

Undergraduate Research Assistant

Feb. 2026–Present

- Designed an Altium test-point carrier PCB for a TI C2000 motor-control teaching bench used by 70+ students per semester.
- Performed LCR measurements on an EV motor stator and Nissan EESM and disassembled the Nissan drive module to inspect its internal construction.
- Built Python and MATLAB workflows for deterministic FEM flux-map sampling, invariant checks, and equal-budget comparisons of polynomial, kernel, tree, and neural-network surrogates.

ACTIVITIES

Aggie Robotics

College Station, TX

Combat Robotics Electrical Engineer

Sep. 2025–Present

- Captured ESP32 SPI traffic to diagnose missed NRF24L01 acknowledgements; evaluated decoupling changes, replaced the link with ESP-NOW, and verified master-slave control.

SOMTECH MIRAGE URC Team

College Station, TX

Robotic Arm Mechanical Designer – Slip-Ring Team Lead

Sep. 2025–Present

- Designed a non-invasive SOLIDWORKS clamp for a 5 kg load at 1 m reach and modeled a 48 W slip-ring bench for contact-resistance, voltage-drop, and thermal testing under 50 N m.

T.U.R.T.L.E (CNTR)

College Station, TX

Electrical Team Lead

Sep. 2025–Jan. 2026

- Built the robot-arm power budget and integrated the ESP32, motor controllers, converters, servos, wiring, and LiFePO4 battery into a working prototype shown to 200+ attendees.

PROJECTS

Three-Phase SiC Inverter & Isolated Gate-Drive PCBs | *Altium, SOLIDWORKS*

- Laid out a three-phase SiC switching PCB and separate isolated gate-drive board in Altium, keeping high-current switching loops compact to reduce parasitic inductance and EMI.
- Added power and ground pours and modeled the heat sink in SOLIDWORKS to coordinate current paths, board packaging, and thermal management.

Touchless Robotic Lighting System – Hardware | *ESP32, DM556, Onshape*

- Designed the 24 V power architecture for three DM556 stepper drivers, including regulated 3.3 V, 5 V, 6.8 V, and 12 V rails for the control and actuator hardware.
- Integrated the ESP32 controls, stepper drives, wiring, and rapid-prototyped parts into the assembled 2-DoF arm hardware.

Six-Wheel Rocker-Bogie Rover | *Onshape, GD&T, FDM Printing*

- Designed a six-wheel rocker-bogie suspension and chassis in Onshape, balancing structural strength with material-efficient geometry.
- Designed and 3D-printed a 16:1 wheel-integrated planetary gearbox; applied GD&T across four prototypes to tune PLA printing tolerances and improve component fit.