

SIDDHI DILIP CHOUGULE

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EDUCATION

COEP Technological University, Pune

2024 – 2028

B.Tech Electrical Engineering (Minor: Quantum Computing) | CGPA: 8.16

JEE: 96.27%ile | MHT-CET: 99.31%ile

TECHNICAL SKILLS

Languages	C, Embedded C, Python, Assembly (8051), MATLAB, SQL (PostgreSQL)
Embedded	MCUs: MSPM0G3507, 8051, ESP32, Arduino; Peripherals: GPIO, Timers, PWM, ADC; Protocols: UART, SPI, I ² C, CAN
PCB Design	KiCad — Schematic Capture, Layout, Footprint Verification, DRC
Simulation	Keil µVision, LTSpice, Proteus, MATLAB/Simulink, Code Composer Studio, TI SysConfig, PartQuest
Data & Viz	Power BI, Tableau, Python (Pandas, NumPy, Matplotlib, Seaborn, Plotly)

PROJECTS

Dual-Tone Multi-Frequency (DTMF) Tone Generator — TI MSPM0G3507 LaunchPad

2026

Embedded C, Code Composer Studio, TI SysConfig, GPIO (Texas Instruments WiSH Program)

- Built a DTMF tone generator using GPIO-based 4×4 matrix keypad scanning and precomputed sine lookup tables; configured peripherals via TI SysConfig and validated on hardware.

Embedded Sensor-Based LED Control System (PCB Design)

2026

KiCad, Arduino, ATtiny

- Designed full PCB-based reactive LED system in KiCad — schematic, footprint mapping, 3D-verified layout, ready for manufacture.
- Integrated light & sound sensor inputs with ATtiny MCU; achieved ~15-level intensity variation based on ambient input via PWM.

Motor Speed & Temperature Monitoring System

2026

8051 Microcontroller, Embedded C, Proteus

- Built interrupt-driven 8051 system for real-time motor speed & temperature monitoring with UART data logging.
- Validated end-to-end in Proteus simulation; resolved pin-conflict and PWM timing issues before hardware implementation.

TECHNICAL EXPERIENCE

Texas Instruments India — Women in Semiconductors & Hardware (WiSH) Mentee

May 2026 – July 2026

- Selected through a competitive assessment and interview process; completed structured training in embedded systems, analog electronics, and semiconductor fundamentals.
- Implemented and verified op-amp circuit configurations (inverting, non-inverting, integrator, differentiator, active filters) using the TI ASLK Pro Kit.
- Participated in a Design Thinking Challenge (multidisciplinary team, hardware-oriented prototype) and completed an Analog Semiconductor Bootcamp plus a PCB reverse-engineering & debugging workshop.

Technical Member (E-Powertrain) — Team Nemesis Racing, COEP (BAJA SAE)

Feb 2026 – July 2026

- Developing embedded control logic for electric ATV powertrain subsystems, integrating motor speed feedback and PWM-based drive via Arduino and ESP32.
- Contributing to BMS design with real-time voltage/current monitoring and threshold-based protection logic.
- Designing control PCBs in KiCad; responsible for schematic review and footprint verification.

LEADERSHIP & ACTIVITIES

Volunteer and Coordinator — Mindspark'24, Mindspark'25, COEP Technical Festival

- Managed cross-functional teams and external stakeholders for a 40,000-footfall technical festival; handled vendor communication, logistics, and real-time problem resolution.

Active Member — NSS Unit, COEP Tech. | Player — COEP Girls Kabaddi Team

INTERESTS

Embedded Systems | Semiconductor Engineering | PCB Design | Power Electronics | Electric Vehicles | Data Analytics