

AARAV ARORA

A CSE student who actually builds things across software, AI, and hardware.

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PROFILE

2nd-year Computer Science Engineering undergraduate at VIT Chennai with practical experience building AI/ML applications, cloud workflows, and embedded systems. Background includes an AI/ML internship, a published robotics patent, and technical project experience across quantum computing and robotics.

EDUCATION

VIT Chennai — B.Tech in Computer Science & Engineering | 2025 – Expected Summer 2029

TECHNICAL SKILLS

- **Languages:** Python, C, C++, Java, SQL
- **AI & Developer APIs:** Microsoft Graph API, Gemini API, Prompt Engineering
- **Cloud & Backend:** Microsoft Azure, MongoDB, ngrok, Authentication & Authorization, AWS, GCP
- **Web & Scientific:** React, Next.js (basic), TypeScript, HTML/CSS, Qiskit, NumPy, Matplotlib
- **Developer Tools:** Git, GitHub, Linux (Arch) / Bash, VS Code
- **Hardware & Embedded:** ESP32, Arduino, MPU6050 IMU, Ultrasonic Sensors, Motor Drivers, Coreless DC Motors, lasers, NFC reader, Fingerprint sensor

EXPERIENCE

AI/ML Intern — ElyxDigital | May 2026 – Jun 2026

- Engineered an automated meeting bot using Python and Microsoft Graph API to built Azure-backed backend services with OAuth 2.0 access-control flows and MongoDB for persistent client data and to capture meeting audio/transcripts and generate structured summaries and action items.
- Developed webhook-driven event handlers and integration workflows tested via ngrok, supporting automated message management, calendar scheduling, and notification workflows.

PROJECTS & INVENTIONS

Smart Cleaning Bot — Co-Inventor | Published Patent | Embedded Systems, C++, Web Interface

- Co-inventor on a published patent for an autonomous floor-cleaning robotic system integrating sensor arrays and mechanical cleaning mechanisms.
- Collaborated on autonomous navigation and obstacle-avoidance using ultrasonic sensing, motors, rotating brushes, and a microcontroller.
- Designed a browser-based interface for manual movement, sensor data, cleaning controls, grid mapping, command logs, and connection status.

Simulating Quantum Bell Entanglement — Group Project | Python, Qiskit, Qiskit Aer, NumPy, Matplotlib

- Constructed a Python/Qiskit simulation pipeline to generate and analyze all four maximally entangled two-qubit Bell states using H, CNOT, X, and Z gates.
- Executed 1,000-shot simulations on Qiskit Aer, validating measurement probability distributions against theoretical predictions.
- Analyzed state vectors, reduced density matrices, and von Neumann entropy to quantify quantum entanglement and circuit behavior.

Mini Quadcopter Prototype | ESP32, MPU6050 IMU, Motor Drivers, Coreless DC Motors

- Assembled a compact quadcopter prototype on a custom perf-board chassis using an ESP32 and MPU6050 6-axis IMU.
- Worked on embedded motor-control behavior, sensor integration, wiring, and control logic with AI-assisted development.

LEADERSHIP & INVOLVEMENT

- **IEEE Computer Society, VIT Chennai — Management Department Member:** Supported planning, promotion, and execution of technical events and student activities.
- **Microsoft Innovation Club, VIT Chennai — Management Department Member:** Contributed to event planning, participant outreach, promotional materials, and execution.
- **Robotics Club, VIT Chennai — Operations & Outreach Department Member:** Contributed to hands-on robotics projects and technical event preparation.