Parth Chhabra

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OBJECTIVE

Innovative high school technologist and aerospace enthusiast aiming to leverage strong technical, analytical, and leadership skills to pioneer cutting-edge solutions at the intersection of embedded systems, aerospace, and AI.

EDUCATION

Radiant (Integrated with MDS, Udaipur)
CBSE Class 11 (2024-2025)
Achievements: Consistent top performer in Science & Tech events, selected for Inspire Awards and DST competitions.

Delhi Public School, Udaipur
Grades 1 to 10 (2015-2024)

Landmark Worldwide
Leadership & Self-Management Forum Graduate (2024)

TECHNICAL SKILLS

Programming & Scripting: Python, C++, HTML, CSS, JavaScript, TypeScript, Bash, SQL
Frameworks & Tools: React, Node.js, Firebase, Git & GitHub, Arduino IDE, MicroPython
Engineering & Embedded: Fusion 360, CAD, Robotics, KiCad, Simulink
Advanced Computing: Linux, TensorFlow, Docker, AWS, OpenCV, Cybersecurity, Database Administration

CERTIFICATIONS

Advanced Python, Udemy (2025)
Machine Learning with TensorFlow, Coursera (2023)
Cybersecurity Fundamentals, Udemy (2023)
Landmark Forum, Leadership & Self-Management (2024)

EXPERIENCE

XDS Aerospace (Formerly Casespace)
Founder & Head of Avionics | 2023 - Present
- Designed and deployed cutting-edge rocket computer systems like the ELSA-X series.
- Developed ESP32 and Raspberry Pi-based PID control systems.
- Streamlined hardware workflows for telemetry acquisition and thrust vectoring.
- Created 3D printed housings using Fusion 360, with custom PCB routing in KiCad.

Rajasthan Youth Conference (RYC)
Vice President & Head of Technology | 2023 - Present
- Developed full-stack web infrastructure (dashboard, attendance, forums) using Firebase and vanilla JS.
- Engineered NFC-based attendance system with custom ESP32 reader-writer modules.
- Built a desktop application using PyQt6 for data management during conferences.

ACHIEVEMENTS

Inspire Awards: AI Robotic Arm (2022), Solar Cleaner (2024 Nominee)
DST Competitions: 1st Place District & State Level (2024), National Nominee

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Pacifest Tech Fest: 1st Place (2024)
CBSE Regional Science Fair (2024): Contributed to a flight computer under Mathematical Modelling category

MAKER'S PORTFOLIO

ELSA-X Series Rocket Computers
- Custom-built aerospace control computers with PID stabilization.
- Hardware: ESP32-WROOM32, MPU6050, BMP180, EDF unit, 3D-printed fins, thrust-vectoring servos
- Software: C++ for microcontroller logic, Python for telemetry logging and PID tuning, Kalman filtering for sensor fusion
- Integration: Real-time GUI using PyQt, Mac app built using SwiftUI + SceneKit, web interface hosted on Pi for local data display

Contactless Solar Panel Cleaner
- IoT-based solar panel cleaning system using air jets to remove dust without water.
- Tech Stack: Arduino, Relay Modules, Motor Driver, Ultrasonic sensors, 3D-modeled air-blower brackets
- Impact: Designed for low-resource areas; increases panel efficiency while reducing water usage.

AI Robotic Arm
- Voice-controlled robotic arm powered by OpenAI API.
- Hardware: SG90 servo motors, custom 3D printed joints, Arduino UNO
- Software: Python + Serial communication, speech-to-text integration, OpenAI prompt engineering

Ionic Wind Thruster
- Built a functional ionic propulsion system using high-voltage ion generators.
- Physics: Leveraged ionic wind (electrohydrodynamic thrust) using a custom high-voltage circuit
- Challenges: Required ultra-light materials and high-voltage insulation strategies

RYCMUN Dashboard & ID System
- Built for delegate registration, NFC attendance, and committee forums.
- Frontend: HTML, CSS, Vanilla JS
- Backend: Firebase Authentication, Firestore Database, Hosting
- Hardware: ESP32 reader boards programmed in MicroPython with serial handshake to local Python app