Atharva Shirahatti

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SUMMARY

B.Tech Computer Science student, founder, and systems researcher building confounder-controlled medical AI auditing frameworks, high-assurance backend platforms, and IoT edge systems. Architected CharakAstra's 8-Gate diagnostic protocol unmasking demographic shortcuts across 562 multi-center patient scans. Proven technical depth across radiogenomics, vulnerability assessment, embedded firmware (ESP32), geospatial analysis, and award-winning hackathon engineering.

EDUCATION

Annasaheb Dange College of Engineering and Technology (ADCET) Aug 2025 – Aug 2029
Bachelor of Technology, Computer Science and Engineering *Ashta, Maharashtra, India*

EXPERIENCE

Founder & CEO Jan 2026 – Present
CharakAstra *Ashta, Maharashtra, India*

- Architected a research-grade glioma radiogenomics auditing platform and 8-Gate diagnostic protocol unmasking shortcut learning (21-year age-gap bias) and data leakage in clinical ML models before deployment.
- Engineered multi-center validation on 562 patients, extracting 544 IBSI-compliant stable features (ICC ≥ 0.75) and implementing 100% leakage-free 5×5 nested cross-validation with zero data snooping.
- Built provenance-gated FastAPI backend, Qt6 C++17 workstation daemon, and React 18 clinical interface with SHA-256 tamper-evident audit trails.

Member, eYantra Robotics Club Sep 2025 – Present
Annasaheb Dange College of Engineering and Technology (ADCET) *Ashta, Maharashtra, India*

- Engineered embedded robotics and automation systems using Arduino and ESP32; designed low-latency sensor integration circuits and edge telemetry firmware.

Cybersecurity Intern Dec 2025 – Jan 2026
Redynox *Ashta, Maharashtra, India*

- Conducted network reconnaissance, vulnerability assessments, and web application security testing using Nmap, Wireshark, Burp Suite, and OWASP ZAP in Linux environments.

PROJECTS & HACKATHONS

CharakAstra – Confounder-Controlled Radiogenomics Platform | *Python, PyTorch, FastAPI, Qt6/C++, React, DICOM* 2026

- Discovered demographic shortcuts in brain tumor AI where age disparity inflated baseline AUC to 0.94; proved confounder-neutralized performance dropped to 0.58. Integrated 8-Gate audit pipeline and DICOM volume streaming.

Railway Track & Axle Condition Monitoring System | *ESP32, Sensor Integration, Edge Computing, IoT* 2026

- Built an embedded sensor-based monitoring system for track/axle safety; **Selected for District Level AVISHKAAR Project Competition organized by Shivaji University**; showcased at AVISHKAAR Season 3 and Kaneri Math Exhibition.

Lunar Surface Ice Detection, Characterization & Traverse Planning | *Python, GIS, Data Processing* 2026

- Developed an autonomous system for lunar-surface ice detection and traverse-planning; presented at the **Bharatiya Antariksh Hackathon** and the **Zupp Faraway International Hackathon**.

Soil Health & Crop Recommendation System | *IoT Sensor Integration, Python, Machine Learning* 2026

- Designed sensor-driven telemetry hardware for real-time soil parameter analysis; exhibited at **DIPEX 2026**, Maharashtra State-Level Project Exhibition.

BhuVijyan – Geospatial Crop Survey System | *GIS, Python, Satellite Remote Sensing* 2026

- Built a GIS-based crop survey pipeline combining multi-spectral satellite imagery and classification; reached the **Final Round of the Pune Agri Hackathon 2026**.

TECHNICAL SKILLS

Medical AI & Radiomics: Confounder Auditing, Radiogenomics, IBSI Feature Extraction, PyTorch, DICOM/NIfTI, Nested CV, TRIPOD-AI
Programming & Systems: Python, C/C++, FastAPI, Qt6 (C++17), React 18, TypeScript, REST & gRPC, Docker, SQL, Bash/Linux, Git/GitHub
Cybersecurity & Networks: Network Security, Vulnerability Assessment, Penetration Testing, Nmap, Wireshark, Burp Suite, OWASP ZAP, TCP/IP
Embedded & IoT: ESP32, Arduino, Sensor Integration, Edge Computing, Hardware-Software Interfacing, Telemetry Firmware
Certifications: Tata Cybersecurity Analyst Job Simulation, Google Security Operations Deep Dive, Linux Unhatched, SQL Injection Attacks