



# SAPTARSHI SADHU

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## PROFESSIONAL SUMMARY

Computer Science undergraduate specializing in Artificial Intelligence & Machine Learning, with strong hands-on experience in full-stack development and applied machine learning. Proficient in React, Node.js, and MongoDB; proven ability to build and deploy scalable systems end-to-end. Demonstrated research aptitude through ML air-quality prediction work targeting journal publication. Adept at leading cross-functional teams under pressure and continuously deepening technical expertise.

## SKILLS

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**Programming Languages:** C, C++, Java, Python, JavaScript

**Frontend Development:** HTML, CSS, React.js, Tailwind CSS, Bootstrap, EJS

**Backend Development:** Node.js, Express.js

**Database:** MongoDB, SQL, Supabase

**Core Computer Science:** Data Structures & Algorithms, Object-Oriented Programming, DBMS

**Tools & Technologies:** Git, GitHub, VS Code

**Machine Learning:** Scikit-learn, Pandas, NumPy, Data Preprocessing, Feature Engineering

## EXPERIENCE, LEADERSHIP & RESPONSIBILITIES

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**Publicity Chair** · *ACM Student Chapter* | Kolkata, India

*Apr 2026 – Present*

- Architected and executed chapter-wide promotional campaigns, driving measurable growth in event attendance and community outreach.
- Managed all social media channels; developed and published creative marketing assets in collaboration with committee members.
- Coordinated guest speaker invitations and special events (seminars, workshops), strengthening the chapter's professional network.
- Organized technology-focused events that boosted student engagement and ACM chapter visibility.

**Student Coordinator** · *IETE Student Chapter* | Kolkata, India

*Mar 2026 – Present*

- Spearheaded student events and professional development programs, maintaining accurate membership records and chapter databases.
- Served as primary liaison between students and faculty, ensuring timely communication of program updates and policy changes.
- Produced promotional materials that elevated chapter participation and facilitated cross-organizational networking opportunities.

**Class Representative (CR)** · *Adamas University* | Kolkata, India

*Oct 2025 – Present*

- Advocated for classmates by coordinating academic resources, resolving concerns, and fostering a collaborative learning environment.

- Assisted in launching student-led initiatives and ensuring university policy compliance across the student body.
- Facilitated regular administration meetings and disseminated timely information on academic events and opportunities.

### **Competitive Programming & Events** · *Adamas University* | Kolkata, India

*Mar 2025 – Present*

- Finalist, Clash of Coders 2.0; achieved 4th place in Coding Premier League — demonstrating elite algorithmic problem-solving under time-constrained conditions.
- Consistently tackled real-time algorithmic challenges, reinforcing advanced DSA and competitive-programming skills.

### **Team Leader — AI Impact Summit Buildathon** · *HCL GUVI* | Kolkata, India

*Feb 2026 – Feb 2026*

- Led end-to-end development of a multilingual AI-based human-vs-AI text detection system supporting 5 languages within strict time constraints.
- Designed and implemented core classification logic using AI-generated vs human-written content analysis.
- Integrated and exposed a local server via ngrok for real-time demonstration; maintained 6+ days of continuous uptime.
- Directed task distribution, problem-solving strategy, and system design throughout the buildathon.

### **Project Head — Interdisciplinary ML Project** · *Kolkata, India* |

*Aug 2025 – Nov 2025*

- Led development of an ML model for urban air quality prediction across 13 locations using real-world CAAQMS datasets.
- Managed data preprocessing, feature engineering, modelling pipeline, and research documentation end-to-end.
- Coordinated cross-functional team alignment, defined project scope, tracked milestones, and prepared findings targeting journal publication.

### **Web Developer Intern** · *InternPe* | Kolkata, India

*Jun 2025 – Aug 2025*

- Built responsive web interfaces with HTML, CSS, and JavaScript; developed interactive prototypes to accelerate client feedback cycles.
- Collaborated on feature delivery, ensuring cross-browser compatibility through systematic QA testing.

### **Campus Ambassador** · *LetsUpgrade* | Kolkata, India

*Jun 2025 – Jul 2025*

- Promoted educational courses via social media and campus events, increasing platform awareness and student enrolment.
- Organized workshops and conducted surveys to assess student learning needs, providing feedback to improve program design.

### **Team Leader — Smart India Hackathon (SIH)** · *Kolkata, India* |

*Sep 2024 – Sep 2024*

- Led the team across two SIH editions (2024 & 2025), coordinating project timelines, brainstorming sessions, and solution design.
- Developed project proposals for judges; managed task distribution and facilitated smooth team collaboration.

## **EDUCATION**

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### **Bachelor of Technology — Computer Science & Engineering**

*Adamas University, Kolkata, West Bengal* | *Expected Aug 2028*

Specialization: Artificial Intelligence & Machine Learning

1st Sem CGPA: 9.3 · 2nd Sem: 9.5 · 3rd Sem: 9.43 · Overall GPA: 9.41

### **Higher Secondary Education (Class XII — PCMB)**

*B.T. Road Govt. Spon H.S. School, Kolkata, India* | *May 2019*

Score: 89.6% — Pure Science Stream (PCMB)

## Secondary Education (Class X)

B.T. Road Govt. Spon H.S. School, Kolkata, India | May 2019

Overall Score: 93.7%

## PROJECTS

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### Machine Learning Air Quality Prediction (Research Project)

Tech: Python, Scikit-learn, Pandas, NumPy

- Developed predictive ML models for urban air pollutants (VOC, NO<sub>x</sub>, O<sub>3</sub>) using real-world CAAQMS datasets from 13 locations.
- Performed extensive preprocessing: timestamp alignment, IQR/Hampel outlier detection, missing-value handling, and time-based feature engineering (hour, season).
- Benchmarked Linear Regression, Decision Tree, Random Forest, XGBoost, SVR, and LSTM; achieved best results with Random Forest for non-linear emission patterns.
- Conducted correlation and residual analysis to identify ozone-titration atmospheric effects; visualised diurnal plots, heatmaps, and seasonal trends.
- Research paper prepared for journal publication (Nature Cities).

### Full Stack Authentication System (<https://github.com/SAPTARSHI-coder/civicissue-dashboard>)

Tech: Node.js, Express.js, MongoDB, EJS

- Built a complete user authentication system with sign-up, login, logout, and session management using MVC architecture principles.
- Implemented secure password hashing, input validation, and protected routes for persistent MongoDB-backed user data storage.
- Developed dynamic UI rendering with EJS templating; completed end-to-end delivery in a short time frame.

### Techtonics — AI Assisted Learning Platform (<https://github.com/SAPTARSHI-coder/Techtonics>)

Tech: JavaScript, AI APIs, Web Technologies

- Developed an AI-assisted platform enabling beginners to learn coding step-by-step through interactive, guided explanations.
- Integrated AI-based assistance for problem-solving and improved accessibility for non-technical users.

### EaseFlowCSS — Lightweight CSS Framework (<https://github.com/SAPTARSHI-coder/EaseMotion-css>)

Tech: CSS, HTML

- Developed a custom CSS framework with reusable utility classes prioritizing developer-friendly design and minimal configuration.
- Focused on rapid layout building and improving efficiency in building responsive interfaces.

### Weather Web Application (<https://github.com/SAPTARSHI-coder/Weather-App>)

Tech: JavaScript, REST API, HTML, CSS

- Built a real-time weather app using external weather APIs with dynamic data fetching and display based on user input/location.
- Processed and displayed multiple weather parameters (temperature, humidity, conditions); strengthened async JavaScript proficiency.

### Personal Portfolio Website (<https://github.com/SAPTARSHI-coder/Portfolio>)

Tech: HTML, CSS, JavaScript

- Designed and developed a personal portfolio showcasing projects and technical skills with responsive design across devices.
- Integrated project links and structured presentation optimised for professional visibility.

## AWARDS & HONORS

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- Finalist — Clash of Coders 2.0
- 4th Position — Coding Premier League
- 4★ in C on HackerRank
- 3★ in C++ and Problem Solving (HackerRank)
- Selected for AWS College Showcase — among 7 selected teams
- Selected for CTRLS Data Center Industrial Visit — exposure to enterprise-level data center infrastructure

## CERTIFICATIONS

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- AI Impact Summit Buildathon — HCL GUVI (2026)
- Urban Vision Hackathon 2025 — Certificate of Achievement (Ministry of Education, Government of India)
- Full Stack Web Development Training — DevTown (2025)
- Data Structures & Algorithms using C++ — DevTown (2025)
- Competitive Programming Course — DevTown (2025)
- Core Concepts of C++ — DevTown
- Core Concepts of Java — DevTown

## ACTIVITIES

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- Active participant in hackathons and coding competitions (SIH, Clash of Coders, Coding Premier League)
- Regularly practise problem solving and competitive programming
- Contribute to technical discussions and peer learning communities
- Build projects spanning web development, machine learning, and system design
- Actively learning system design patterns and scalable software architecture

## HOBBIES AND INTERESTS

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- Building and experimenting with real-world tech projects
- Competitive programming and problem solving
- Exploring system design and scalable architectures
- Participating in hackathons and technical competitions
- Learning emerging technologies in AI and software development

## WEBSITES, PORTFOLIOS, PROFILES

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**Portfolio:** <https://saptarshisadhu.co.in>

**LinkedIn:** <linkedin.com/in/saptarshi-sadhu>

**GitHub:** <github.com/SAPTARSHI-coder>

**X (Twitter):** [x.com/saptarshi\\_sadhu](x.com/saptarshi_sadhu)

## LANGUAGES

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**Bengali:** Native

**English:** Proficient (C2)

**Hindi:** Proficient (C2)

**German:** Beginner (A1)