

# Sayan Paul

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Kolkata, West Bengal, India

## PROFESSIONAL SUMMARY

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- **Cross-Domain Engineer:** ECE student who independently mastered Data Science & ML through 250+ hours of self-study while maintaining core electronics curriculum
- **Production-Ready Builder:** Developed 3 end-to-end ML applications with deployment pipelines, API integration, and real-time data processing—solving problems in sports analytics, weather forecasting, and financial systems
- **Results-Driven:** Achieved 3rd place in college hackathon; led 2 project teams (8+ members) to successful completion; organized 5+ technical events reaching 200+ students

## EDUCATION

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**Bachelor of Technology in Electronics & Communication Engineering** Expected 2028  
*Maulana Abul Kalam Azad University of Technology (MAKAUT)* *Kolkata, West Bengal*

- CGPA: 7.49/10.0 (Balanced with 250+ hours of external Data Science learning) — ECE Coursework: Signal Processing, Circuit Analysis, Communication Systems, Electromagnetics
- **Self-Directed Data Science Mastery:** Independently acquired Python, ML frameworks, database design, and web deployment skills through Coursera, Udemy, project-based learning, and technical documentation

## TECHNICAL SKILLS

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**Programming Languages:** Python, C, SQL, HTML, CSS, JavaScript  
**Data Science & ML:** Pandas, NumPy, Scikit-learn (Random Forest, Logistic Regression), Matplotlib, Seaborn, Plotly  
**Tools & Technologies:** Git/GitHub, Flask, MySQL, SQLite, Jupyter, VS Code, REST APIs, Environment Management  
**Domain Expertise:** Signal Processing, Systems Analysis, Electronics Fundamentals, Statistical Modeling, Feature Engineering  
**Currently Learning:** TensorFlow, PyTorch, Cloud Deployment (AWS/GCP), LeetCode DSA (50+ problems solved)

## PROJECTS

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- IPL Prediction Engine** | *Python, Flask, Scikit-learn, Pandas, TailwindCSS* 🐙 GitHub
- Built production-grade ML web application predicting IPL match outcomes using Logistic Regression trained on 150,000+ ball-by-ball historical records, achieving 73% prediction accuracy across 200+ test matches
  - Engineered 15+ features from raw delivery data including strike rates, wicket patterns, venue-specific performance, and head-to-head records to capture team strength dynamics
  - Designed modular architecture with separate training and inference pipelines; deployed Flask REST API serving real-time predictions with <math>500\text{ms}</math> response time
  - **Real-World Impact:** Enables fans to make data-driven predictions; simulates full tournament outcomes with dynamic standings and playoff scenarios
- Weather Forecast Predictor for Kolkata** | *Python, Random Forest, Plotly, OpenWeatherMap API* 🐙 GitHub
- Developed 7-day multi-variable weather forecasting system predicting max/min temperature and humidity using Random Forest Regression on 5+ years of historical climate data, achieving RMSE of  $3^{\circ}\text{C}$
  - Integrated live OpenWeatherMap API for real-time data injection; implemented secure credential management using environment variables and automated daily model retraining pipeline
  - Created interactive Plotly dashboard with confidence intervals and historical comparison, processing 1500+ data points for visualization
  - **Real-World Impact:** Assists local residents and businesses in planning around Kolkata's unpredictable monsoon patterns with higher accuracy
- Command-Line Banking System** | *Python, SQLite, OOP, SHA-256 Hashing* 🐙 GitHub
- Engineered secure banking management system handling 50+ concurrent accounts with atomic transaction processing, PIN authentication using SHA-256 hashing, and persistent SQLite storage

- Implemented object-oriented design with 8 classes ensuring clean separation of concerns; achieved 100% transaction integrity through database ACID compliance
- Built administrative analytics dashboard aggregating branch-level performance metrics and real-time fund tracking across multiple accounts
- **Real-World Impact:** Demonstrates production-ready financial software principles including security, auditability, and regulatory compliance frameworks

## LEADERSHIP & IMPACT

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**Project Team Lead** (2 teams, 8+ members total): Coordinated project deliverables, sprint planning, and code reviews during 3-month Data Science course; achieved 100% on-time delivery with zero blockers escalated

**Event Organizer:** Hosted Smart India Hackathon internal round (150+ participants), club opening ceremonies, and 3 technical workshops reaching 200+ students; managed logistics, judge coordination, and sponsorship outreach

**Campus Ambassador, KSHITIJ Program:** Drove student engagement in technical competitions; recruited 30+ participants to join our programs

**JIS Debate & Literacy Club Member:** Contributed to organizational planning for literary events and inter-college competitions

## CERTIFICATIONS & ACHIEVEMENTS

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**3rd Place, College Hackathon** — Built real-time anomaly detection system in 24 hours; judged on innovation and technical execution

**Data Science with Python, 3-Month Intensive Program** — Completed 120+ hours of hands-on training covering ML algorithms, statistical analysis, and deployment; led 2 capstone projects

**Generative AI Workshop, Upskill (8 Hours)** — Gained foundational knowledge in LLMs, prompt engineering, and AI ethics

**Hackathon Participation** — Competed in 5+ national/international hackathons including Smart India Hackathon qualifiers

## ADDITIONAL INFORMATION

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**Languages:** English (fluent), Bengali (native), Hindi (fluent) | **Interests:** Competitive chess (1000+ rating), open-source contribution, data storytelling