Param Desai

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Profile

B.Tech Computer Science student at Nirma University and Data Science Diploma candidate at IIT Madras with interests in Artificial Intelligence, Machine Learning, Explainable AI, Cybersecurity, NLP, and Intelligent Systems. Experience spanning academic research, production-oriented AI development, sustainability-focused applications, and leadership within technical communities.

Education

Institute of Technology, Nirma University 2023 – Present

B.Tech in Computer Science and Engineering

CGPA: 8.31/10

Relevant Coursework: Operating Systems, Data Structures and Algorithms, Object-Oriented Programming, Database Management Systems, Computer Networks, Design and Analysis of Algorithms, Software Engineering, Distributed Computing, Cloud Computing, Machine Learning, Deep Learning, Full Stack Web Development, Compiler Design.

Indian Institute of Technology Madras 2023 – Present

Foundation Level Completed

Diploma in Programming Completed

Diploma in Data Science (In Progress)

Relevant Coursework: Machine Learning Foundations, Machine Learning Techniques, Machine Learning Practice, Business Analytics, Business Data Management, Tools in Data Science, Modern Application Development I & II, Database Management Systems, Data Structures and Algorithms.

Research Experience

Research Assistant Jan 2025 – Dec 2025

Sudeep Tanwar's Research Group

- Conducted undergraduate research in Explainable AI, Adversarial Machine Learning, Cybersecurity, and IoT systems.
- Designed and evaluated ML/DL-based attack detection frameworks.
- Studied model robustness under adversarial and noisy environments.
- Contributed to experimentation, evaluation, and publication of multiple IEEE conference papers.

Industry Experience

AI/ML Intern, DYU Labs May 2026 – Jul 2026

- Worked on AI-powered renewable energy solutions involving solar energy systems.
- Developed LangGraph-based conversational AI workflows and NLP pipelines.
- Built statistical and machine learning forecasting models for renewable energy analytics.
- Contributed to production-oriented AI systems serving enterprise and government-sector customers.
- Worked on solutions deployed within customer ecosystems including ISRO, NTPC, Kohler, and Bata.

Research Publications

- **IEEE GLOBECOM 2025**

  Quantum-Secured Explainable Machine Unlearning for Phishing Detection in IoT.

- **IEEE VTC Spring 2025**

  Q-ShielD: CV-QKD Framework for Secure Autonomous Vehicle Communications.

- **IEEE HealthCom 2025**

  Quantum-Based Edge Intelligence Framework for IoT Healthcare Systems.

- **IEEE ICSC 2025 (Presented physically in Tampa, Florida)**

  Deep Learning and Explainable AI Framework for False Data Injection Attack Detection in Autonomous Vehicles.

- **Springer CML 2025**

  Explainable AI and Quantum Security for Smart Homes Network Attack Classification.

- **AI2M4RI 2026**

  Machine Unlearning-based Privacy-First Medical Imaging Framework for TB Detection

Projects

BHOOMI: Satellite-Based Environmental Intelligence Platform

- Built an environmental intelligence platform integrating satellite datasets and forecasting models.
- Applied SARIMA, Prophet, and LSTM models for multi-horizon forecasting.
- Developed AI-assisted municipal reporting and environmental monitoring capabilities.
- Deployed platform for real-world usage through a live web application.

FC Analytics : Football World Cup 2026 Platform

- Developed a full-stack sports analytics platform using FastAPI, React, PostgreSQL, and WebSockets for real-time forecasting, simulation, and auction-based team management.
- Designed a probabilistic prediction engine leveraging Elo ratings, team performance metrics, and Poisson-based goal modelling to estimate match outcomes and win probabilities.
- Implemented Monte Carlo tournament simulations to evaluate qualification, progression, and championship probabilities across large-scale international football competitions.
- Engineered a real-time multi-user auction system with synchronized state management, live bidding, budget constraints, and WebSocket-based communication for concurrent user interactions.

PetBot: AI Restaurant Revenue Intelligence Platform

- Developed an LLM-powered RAG system with NL-to-SQL capabilities.
- Built analytics pipelines for revenue and operational intelligence.
- Integrated conversational AI and voice-assisted workflows.

Leadership and Professional Activities

Treasurer, Computer Society of India (CSI), Nirma University Aug 2025 – Present

- Lead financial planning and sponsorship activities for CSI initiatives.
- Organized HACKaMINeD 2026 in collaboration with SUNY Binghamton University, USA.
- Coordinated event operations involving 2500+ registrations and a prize pool exceeding INR 4.5 Lakhs.

Core Committee Member, CSI Nirma University Jan 2025 – Aug 2025

- Contributed to the organization of HackNUThon 6.0 and CUBIX 2025.
- Assisted in logistics, outreach, sponsorships, and participant engagement.

Achievements

- Runner-Up, HACKaMINeD 2026 (PetBot).
- Runner-Up, AETRIX 2026 (BHOOMI).
- Conference Presenter, IEEE ICSC 2025, Tampa, Florida, USA.
- AWS Academy Graduate – Cloud Foundations.