Akshat Patidar
🌐 Portfolio

Electrical Engineering
Indian Institute Of Technology, Jodhpur

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Github
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Academic Qualifications

Education	Institute	CPI/%
B.Tech (Electrical Engineering)	Indian Institute of Technology, Jodhpur	**8.31**/10
CBSE (XII)	Shri Kanwartara Higher Sc. School, Mandleshwar	**95.6**%
CBSE (X)	Shri Kanwartara Higher Sc. School, Mandleshwar	**93**%

Experience

- **AI/ML Intern, Qualitysoft Corporation Japan** *(Sept-Oct, 2025)*
  - Engineered RAG pipelines using `Langgraph` with custom scrolling and retrieval methods; integrated `DeepEval` for automated quality assessment across multiple evaluation parameters.
  - Developed and deployed production-grade APIs for RAG evaluation tools with custom metrics, achieving robust PDF data extraction from tabular and unstructured formats.
  - Built comparative analysis framework between `Flowise` and `Langgraph` implementations; created responsive frontend and conducted agent debugging with `VLLM` integration.
- **Data Science Intern, Government of Rajasthan** *(May-July, 2025)*
  - Led data-driven planning for Rajasthan's largest CT & MRI tender, using clustering and Excel automation to optimize budgets across 30+ districts.
  - Achieved **32%** reduction in CT scan turnaround time at SMS Hospital by analyzing patient flow and optimizing workflows with time-series and bottleneck analysis.
  - Improved cath lab procurement by analyzing tender data to uncover cost-saving patterns and guide high-value decisions.
- **AI Intern, DevOPS FARM** *(Jan-April, 2024)*
  - Built an agentic AI psychologist using `Langflow` and `Langchain` with integrated facial and voice emotion recognition for enhanced one-on-one interactions.
  - Enabled real-time emotional context awareness to simulate empathetic conversations with users of diverse age groups.
  - Conducted a survey across 200 participants; **83%** preferred the AI bot experience over human interaction.
- **Performance Analysis of Renewable Energy Systems** *(May-July, 2023)*
  - Built a structured dataset to analyze and optimize renewable energy project performance.
  - Built LCOE models tailored for Jodhpur, incorporating system inefficiencies, inflation, and long-term cost projections.
  - Identified optimal payback periods, enhancing ROI through data-driven insights.

Key Projects

- **Emo-Tune: Emotion-Driven Music Player** ⊙ GITHUB
  - Built a music player with FER-based emotion detection and dynamic YouTube playlist generation using `Torch`, `OpenCV`, and `Streamlit`.
  - Designed a Residual Masking Network for 7-class emotion recognition; achieved robust real-time accuracy.
- **LSTM-Based Bitcoin Price Prediction** ⊙ GITHUB
  - Developed an LSTM model ($\mathbf{R^2}$: **0.93**) for Bitcoin forecasting, reducing RMSE deviation by **90%** via advanced preprocessing.
  - Optimized hyperparameters and visualized trends for actionable investor insights.
- **EffiPrune: Lightweight CNN Optimization** ⊙ GITHUB
  - Reduced CNN size by **30%** (accuracy loss <1%) using pruning and knowledge distillation; achieved **95%** accuracy on benchmarks.
  - Improved model efficiency by **7%**, enabling deployment on resource-limited devices.

Technical Skills

- **Programming Languages:** `Python` | `R` | `SQL` | `C++` | `C`
- **Data Tech:** `MySQL` | `PostgreSQL` | `PowerBI` | `Rstudios` | `Excel`
- **Machine Learning & Deep Learning:** `Pandas` | `Numpy` | `Matplotlib` | `Scikit-Learn` | `PyTorch`
- **GenAI:** `Llamaindex` | `LangChain` | `LLM Models` | `Hugging Face` | `RAG` | `Fusion RAG`

Relevant Courses

Pattern Recognition and Machine Learning	Data Structure and Algorithms
Introduction to Computer Sciences	Probability, Statistics and Stochastic Processess
Linear Algebra and Differential Equations	Computer Architecture

Certifications

Advanced SQL by Hackerrank	Introduction to Data Science by Cisco
Data Analytics Essentials by Cisco	Introduction to Generative AI by Google Cloud

Achievements and Leadership

- **Assistant Head and Student Guide, Student Well-being Committee, IIT Jodhpur** *(AY 2023-2025)*
- **Core Team Member, Quant Club IITJ**; **Resources Head, Prometeo** *(AY 2022-2025)*
- **Dining Secretary IITJ: Managing a team of 100+ people** *(AY 2024-2025)*
- Solved **500+** DSA problems across various competitive programming platforms
- Secured **MMVY Scholarship** (top 2% of state) and **1st Rank** in Nimar Sahodaya Mathematics Competition (380 participants)