

ATHARVA HONPARKHE

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Education

Indian Institute of Technology, Jodhpur

Expected Graduation: 2027

B.Tech in Electrical Engineering CGPA: 7.84/10

Jodhpur, Rajasthan

D.A.V Public School, Ludhiana

2023

Class 12 – PCM 94.2%

Ludhiana, Punjab

Experience

Indian Institute of Technology Jodhpur

August 2024 – November 2024

Research-Based Project under Dr. Pratik Mazumder

Jodhpur, Rajasthan

- Devised a Q-learning-based GridWorld simulation for autonomous agents in stochastic environments; **realized a 94% step reduction** and **3.7× reward improvement** over random baselines.
- Constructed an interactive simulation interface using **Tkinter**, featuring Q-value heatmaps and episodic graphs to monitor agent performance over **100+ training episodes**.

Technical Projects

Linguistix — Speaker Identification, MFCC, PCA/LDA, GMM Clustering



February 2025 – April 2025

- Engineered a robust speaker recognition system using **MFCC features** and dimensionality reduction (**PCA/LDA**) to improve speaker differentiation and reduce noise sensitivity.
- Achieved **100% accuracy** with **ANN+LDA** and **99.67% with GMM** across **2.5K+ audio samples** from 50 speakers, outperforming standard clustering approaches.
- Orchestrated a modular experimentation suite enabling dynamic evaluation of ANN, GMM, and SVM models, streamlining comparative analysis via automated metrics tracking.

PlaWorDet — Deep Learning, Streamlit, MLP Architectures, Positional Embeddings



January 2024 – April 2024

- Devised an intelligent MLP-based valuation model leveraging **100K+ FIFA records**, capturing correlations between performance metrics, team dynamics, and transfer values.
- Deployed an interactive **Streamlit dashboard** for real-time user queries, showcasing predictions, insights, and valuation trends through responsive visualizations.
- Integrated **learned positional embeddings** and feature scaling to enhance generalization across unseen data; achieved **78.3% validation accuracy**.
- Implemented seamless live updates connecting user edits with backend prediction engines, improving feedback responsiveness without full model reinitialization.

Track Tracer — C, TCP Socket Programming, Authentication, File Systems



February 2024 – April 2024

- Architected a **TCP-based** client-server reservation platform in C, processing over **50 simultaneous users** with real-time seat matrix updates and **sub-200ms response latency**.
- Instituted a secure **OTP-based login protocol** with file-based credential verification to ensure authentication integrity and minimize breach risk.
- Implemented **multi-threaded concurrency control** with mutex-guarded operations to guarantee race-free execution during ticket bookings across **5+ trains**.

Technical Skills

- **Languages:** Python, C++, C, SQL, HTML/CSS, JavaScript, Verilog, VHDL
- **Technologies:** TensorFlow, PyTorch, scikit-learn, NumPy, Pandas, OpenCV, MongoDB, Gemini LLM, Streamlit, Flask, React, Android Studio, Pygame, Firebase
- **Utilities:** Git, GitHub, VS Code, LaTeX, Linux, Docker, Arduino IDE

Relevant Courses

- **IITJ Coursework:** Pattern Recognition and Machine Learning, Data Structures and Algorithms, Probability Statistics & Stochastic Processes
- **Online:** Deep Learning Specialization (Coursera), Introduction to Networking (Udemy)

Awards & Achievements

- Earned an **A- (Top 10%)** in Introduction to Computer Science Engineering, demonstrating strong grasp of algorithms and programming logic.
- Ranked in the top **0.77%** among **1.2M+ candidates** in JEE Main 2023, reflecting national-level academic excellence.

Leadership & Extracurricular

Student Guide, Student Wellbeing Committee, IITJ

2024 – 2025

Mentored 12 freshmen, supporting academic and emotional growth; contributed to 5+ wellness drives.

State-Level Handball Player

2017 – 2023

1st in Zonals, 2nd in District, qualified for State Tournaments.