Harsh Jain

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Summary

Results-driven second-year Artificial Intelligence and Data Science student with hands-on experience in Python, C++, and full-stack web development. Proven track record of architecting scalable Machine Learning applications, Deep Learning models, and REST APIs through collaborative team projects. Strong problem-solving abilities with expertise in deploying production-ready AI/ML solutions. Passionate about leveraging cutting-edge Artificial Intelligence and Data Science technologies to solve complex problems in scalable software engineering environments.

Education

Savitribai Phule Pune University Pune, India

Bachelor of Engineering in Artificial Intelligence and Data Science *Aug 2023 – May 2027*

- GPA: 8.75/10
- Relevant Coursework: Machine Learning, Deep Learning, Data Structures & Algorithms, Database Management, Software Engineering, Natural Language Processing

Technical Skills

Programming Languages: Python, C++, SQL, JavaScript, TypeScript
Frameworks & Libraries: FastAPI, Flask, React, NumPy, Pandas, Matplotlib, Scikit-learn, XGBoost, Optuna, TensorFlow, PyTorch, REST APIs
Databases & Tools: MongoDB, MySQL, PostgreSQL, Supabase, Docker, Git, GitHub, Leaflet.js
AI/ML Technologies: Machine Learning, Deep Learning, Reinforcement Learning (PPO), Natural Language Processing, RAG Pipelines, Model Optimization, Hyperparameter Tuning
Core Competencies: Data Analysis, Algorithm Optimization, CRUD Operations, Web Development, Microservices Architecture, Agile Methodology, Version Control, Performance Optimization, Team Collaboration, Problem Solving

Project Experience

Self-Evolving Multi-Agent Governance | *Python, Ray RLlib, gRPC, Dash, PostgreSQL* Sep 2024 – Dec 2024

- Co-developed a decentralized self-governing multi-agent simulation system for autonomous decision-making using reinforcement learning (PPO algorithm) and distributed computing
- Built scalable backend microservices and real-time monitoring dashboards for agent metrics using FastAPI and Dash, enabling live performance tracking
- Applied reward optimization and policy adaptation techniques achieving 30% higher convergence rate compared to baseline models
- Collaborated with cross-functional team of 4 developers using Agile methodology and Git version control

FloatChat - AI Oceanographic Data Explorer | *React, TypeScript, FastAPI, RAG, Supabase* Jun 2024 – Aug 2024

- Built an AI-driven conversational interface enabling natural-language exploration of global ARGO oceanographic datasets with 10,000+ data points
- Integrated Retrieval-Augmented Generation (RAG) pipeline for context-aware responses and interactive data visualizations using React and Leaflet.js
- Optimized backend query handling and database indexing, improving response time by 35% and enhancing user experience
- Implemented full-stack TypeScript application with RESTful API design and real-time data streaming capabilities

SO_2 Emission Prediction System | *Python, FastAPI, XGBoost, Optuna, Docker* Mar 2024 – May 2024

- Architected end-to-end ML pipeline predicting SO_2 emissions from Indian coal power plants achieving 85% accuracy on test data
- Deployed production-ready Optuna-tuned XGBoost model via containerized FastAPI microservice with Docker, ensuring seamless cloud deployment and scalability
- Enhanced prediction efficiency by 20% through feature engineering, pipeline automation, and model optimization techniques
- Developed comprehensive REST API documentation and implemented error handling for robust production deployment

Certifications & Training

Machine Learning Specialization | *Andrew Ng, Coursera* Jan 2024

- Completed comprehensive 3-course specialization covering supervised/unsupervised learning, deep learning, model evaluation, neural networks, and real-world ML applications

Python Zero to Hero | *Udemy* Nov 2023

- Mastered advanced Python programming including OOP principles, automation, decorators, and professional development practices

Additional Information

Technical Interests: Artificial Intelligence, Deep Learning, Reinforcement Learning, Natural Language Processing, Computer Vision
Languages: English (Fluent), Hindi (Native)
Soft Skills: Team Leadership, Cross-functional Collaboration, Technical Documentation, Agile Development, Problem Solving