

RITESH TRIPATHI

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Summary

Results-driven Artificial Intelligence and Machine Learning Engineer skilled in developing scalable full-stack and data-driven solutions. Experienced with Python, C++, FastAPI, React.js, Docker, and modern ML frameworks for NLP and computer vision. Passionate about building efficient, production-ready systems integrating AI, backend services, and user-focused design.

Technical Skills

Programming Languages: C++, Python, JavaScript, SQL.
Web Development: React.js, FastAPI, HTML, CSS, Tailwind CSS.
ML: OpenAI API, Pinecone, Neo4j, Sentence Transformers, OpenCV.
Tools: MySQL, Git, GitHub, Docker, Qdrant, Qdrant Cloud, FastAPI.

Experience

Machine Learning Intern (Bharat Intern)

Jun 2023 – Jul 2023

Bharat Intern | [Homepage](#)

Remote

- Built an end-to-end **supervised learning pipeline** to classify Iris flowers into three species (Setosa, Versicolor, Virginica) using key features like petal and sepal dimensions; utilized the UCI Iris dataset for model development and experimentation.
- Implemented and compared multiple algorithms including **Logistic Regression, K-Nearest Neighbors (KNN), and Support Vector Machine (SVM)**. Performed hyperparameter tuning and model evaluation using accuracy, confusion matrix, and cross-validation techniques.
- Achieved over **95 percent test accuracy** visualized data distributions and decision boundaries using Matplotlib and Seaborn.

Education & Courses

Oriental Institute Of Science And Technology

October 2021 – July 2025

Bachelor of Technology in Artificial Intelligence and Machine Learning

CGPA 8th Sem: **7.91**

Relevant Coursework: Artificial Intelligence, Machine Learning, Data Structures, Distributed Computing, Database Management, Operating Systems, Computer Networking, Computer Architecture.

Projects

NFT Ticketing DApp | Solidity, Hardhat, IPFS, React.js, Ethers.js, MetaMask, QR Code, jsPDF | [View Project](#)

- Developed a full-stack **decentralized application (DApp)** for minting verifiable NFT event tickets with embedded QR codes.
- Implemented **smart contracts** on Ethereum using Solidity and Hardhat, and integrated IPFS for decentralized metadata storage.
- Enabled secure, automated ticket distribution through **MetaMask**, Ethers.js, and PDF generation using jsPDF for user-facing digital tickets.

Product Recommendation System | FastAPI, React.js, Tailwind, Qdrant, Docker, Sentence Transformers — [View Project](#)

- Developed a hybrid product recommender system, using **vector similarity search**, and **semantic embeddings (MiniLM)** with Qdrant to enhance product discovery.
- Designed and integrated a **FastAPI backend** for embedding indexing and querying; built a **React.js frontend** with Tailwind CSS for a responsive UI.
- Deployed the full-stack application using Docker with persistent storage volumes to ensure scalable and reliable performance.

Blue Enigma Hybrid AI System | FastAPI, React, Neo4j, Pinecone, OpenAI API, Python — [View Project](#)

- Developed a **Hybrid Knowledge AI System** integrating **Neo4j (graph)** and **Pinecone (vector)** databases with OpenAI GPT models for contextual travel recommendations.
- Enhanced retrieval accuracy by combining **semantic search and graph reasoning**, improving response coherence and contextual relevance.
- Built an end-to-end **FastAPI–React application** featuring real-time **streaming chat**, scalable data pipelines, and modular APIs for future expansion.

Air Lasso Tool | Python, OpenCV — [View Project](#)

- Developed a real-time gesture-based drawing tool using **webcam input and OpenCV** for hand tracking, enabling freehand object selection.
- Simulated a virtual pen using color or gesture-based detection, allowing **touchless interaction** for selection and annotation tasks.
- Designed for **accessibility and contactless control** in digital art, UI navigation, and computer vision-based interfaces.