

Rishabh Singh

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EDUCATION

Vellore Institute of Technology (VIT)

Integrated M.Tech in Artificial Intelligence

Oct 2022 – May 2027

CGPA: 8.43 / 10.0

Relevant Coursework: Data Structures and Algorithms, Database Management Systems, Object-Oriented Programming, Operating Systems, Computer Networks, Data Visualization, Machine Learning, Deep Learning.

TECHNICAL SKILLS

Programming Languages: C++, Python, SQL, R

Machine Learning and Deep Learning: TensorFlow, PyTorch, Keras, Scikit-learn, Detectron2, OpenCV

Data Analysis and Visualization: Pandas, NumPy, Matplotlib, Tableau, Power BI

Databases: MySQL, MongoDB

MLOps and Development Tools: Git, GitHub, Docker, Postman, FastAPI, TypeScript, AWS

Core CS Concepts: Data Structures and Algorithms, Operating Systems, Database Management Systems, Computer Networks, Object-Oriented Programming

PROJECTS

Panoptic Image Segmentation

Oct 2023 – Apr 2024

Technologies: Python, PyTorch, Detectron2, TensorFlow, Keras, OpenCV, CUDA, NumPy

- Built end-to-end panoptic segmentation pipeline using Detectron2, training on 12,000+ labeled images and reducing GPU memory overhead by 22% through optimized tensor operations.
- Improved inference speed by 28% by implementing parallel data loading and efficient batching strategies, enabling real-time processing of video streams at 30 FPS.
- Deployed production-ready inference system achieving 82% segmentation accuracy across diverse test scenarios, processing 1,200+ samples with sub-second latency.

Self-Learning Recommendation System

Sep 2024 – Apr 2025

Technologies: Python, NumPy, Pandas, Scikit-learn, SciPy, Flask, REST APIs, MySQL

- Developed collaborative filtering engine using matrix factorization, reducing recommendation computation time by 38% through sparse matrix operations and vectorization.
- Processed 6,500+ user-item interactions with optimized data pipeline, decreasing memory usage by 42% and improving preprocessing throughput by 3x.
- Built scalable Flask REST API serving personalized recommendations, maintaining sub-200ms response times under 60+ concurrent users with 91% recommendation relevance.

AURA – AI-Powered Service Center Dashboard

Dec 2025 – Jan 2026

Technologies: Python, FastAPIs, TypeScript, React, Recharts, Data Visualization

- Built real-time analytics dashboard tracking 12 operational KPIs with automated anomaly detection, reducing manual monitoring effort by 45% across service operations.
- Integrated 6 ML inference pipelines into interactive dashboard with role-based access for 4 user types, displaying confidence scores and trend analysis through 18 reusable components.
- Implemented data processing pipeline handling 650+ events daily with sub-80ms latency, enabling continuous monitoring and reducing decision response time by 40%.

CERTIFICATIONS

- Programming Fundamentals – Duke University, Coursera (Sep 2023) [Link](#)
- Applied Machine Learning – Coursera (Dec 2023) [Link](#)
- Cloud Computing – NPTEL, IIT (May 2024) [Link](#)
- Data Science for Beginners – NASSCOM (Mar 2025) [Link](#)

LEADERSHIP

- Google Summer of CodeFest 2025 – Innovators Club, VIT:** Advanced to the Development Round among 100+ participants by submitting a machine learning project proposal, placing in the top 20% of applicants.
- MERN X AI Hackathon 2025 – Mern Matrix Club, VIT:** Reached Development Round integrating AI APIs with MERN Stack.
- Event Management Lead – Cooking & Feasting Club, VIT:** Organized online and offline community events.