

Kaustubh Rath

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Summary

Machine Learning Engineer specializing in AI Chatbots and Recommendation Systems. Achieved 89% accuracy in clinical interview chatbot and 85% query automation in news analysis chatbot. Delivered 2,000+ personalized recommendations monthly, boosting user satisfaction by 15%.

Education

B.Tech in Information Technology (Minor in Economics), Indian Institute of Information Technology (IIIT), Allahabad 2022 – Present (Expected Graduation: 2026)

CGPA: 8.3/10 (as of 3rd Year)

Secured 99.35 percentile in JEE Mains 2022 (Top 0.65% nationally)

Relevant Coursework: Data Structures and Algorithms, Machine Learning, Artificial Intelligence, Database Management Systems, Operating Systems, Software Engineering, Computer Security, Data Mining, Probability and Statistics, Linear Algebra

Technical Skills

Python, C++, Machine Learning, Deep Learning, Data Analysis, NumPy, scikit-learn, PyTorch, Keras, TensorFlow, Feature Engineering, Hyperparameter Tuning, Natural Language Processing, Langchain, Chat Models, RAG, Agents and Tools, MySQL, MongoDB, Linux, Process Scheduling, Multithreading, Memory Management, Jupyter Notebooks, Git, Flask, REST APIs, GraphQL, AWS, GCP, Azure

Projects

AI-Powered Multilingual Clinical Interview Chatbot

Challenge: Limited access to clinical interviews due to language barriers.

Outcome:

- Architected multilingual NLP pipelines with Langchain, spanning 5+ languages, to amplify clinical reach.
- Fused symptom extraction and automated reporting via TensorFlow, securing 89% precision.

Knowledge Graph-Powered News Analysis Chatbot

Challenge: Ineffective parsing of relationships from unstructured news content.

Outcome:

- Forged a knowledge graph from 10,000+ articles using Python and NLP methodologies.
- Devised a question-answering framework with PyTorch, automating 85% of queries and slashing 20+ weekly support hours.

Collaborative Filtering Recommendation System

Challenge: Challenges in predicting user preferences with sparse data.

Outcome:

- Dissected interaction patterns of 1,000+ users in MovieLens with scikit-learn and collaborative filtering.
- Delivered over 2,000 personalized recommendations monthly, enhancing user engagement by 15%.

End-to-End Wine Quality Prediction Pipeline

Challenge: Subjective quality evaluation through manual tasting.

Outcome:

- Crafted an ML pipeline with TensorFlow, yielding a 0.45 mean absolute error and 0.85 R-squared across 1,600+ samples.
 - Streamlined access for 50+ users by deploying a Flask application on AWS, accelerating usability by 30%.
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Achievements

- Clinched 99.35 percentile in JEE Mains 2022, ranking among the top 0.65% nationwide.
 - Attained 1534 rating on Codeforces (Expert tier) and surpassed 1900 on LeetCode with C++ mastery.
 - Pioneered an NLP chatbot using Langchain, distilling 100+ documents with 92% precision.
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Experience

Overall Coordinator, Robita Club (Generative AI), IIIT Allahabad

2023 – Present

- Spearheaded a 10+ member team to execute 3+ AI initiatives with PyTorch, orchestrating hands-on workshops.

Coordinator, Rangtarangini (Drama Club), IIIT Allahabad

2023 – Present

- Orchestrated large-scale cultural events for 1,000+ attendees, ensuring seamless delivery.
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Languages & Interests

Languages: English (Fluent), Hindi (Native)

Interests: Competitive Programming, Economics, AI Research
