

Harsh Misra

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SUMMARY

AI & ML Engineering student with hands-on experience building production-ready AI applications, OCR systems, NLP-based analytics platforms, and scalable backend APIs. Skilled in Python, FastAPI, Machine Learning, SQL, Docker, and Cloud Technologies. Developed and deployed real-world solutions including an OCR Document Scanner API and an Emotion-Aware Student Feedback Portal. Passionate about Artificial Intelligence, Backend Development, Data Structures & Algorithms, and solving complex engineering problems through technology.

EDUCATION

R.R. Institute of Modern Technology, AKTU, Lucknow

Bachelor of Technology (B.Tech) – Computer Science & Engineering (AI & ML), Current Expected Graduation: 2028
Percentage: 81%, Relevant Coursework: Data Structures & Algorithms, Artificial Intelligence, Machine Learning, Database Management Systems, Cloud Computing, Operating Systems, Computer Networks

PROJECTS

OCR API & Document Scanner | Tech Stack: FastAPI, Python, OpenCV, Tesseract OCR, Docker, NumPy

- Developed a production-ready OCR API capable of extracting text from images and multi-page PDFs with high accuracy using Tesseract OCR and advanced image preprocessing.
- Built an end-to-end document processing pipeline including image enhancement, denoising, thresholding, text cleaning, and OCR correction.
- Designed scalable REST APIs using FastAPI for document scanning and JSON-based text extraction.
- Integrated multilingual OCR support and optimized processing time for near real-time document processing.
- Containerized and deployed the application using Docker and Render with a public frontend hosted on Vercel.

Emotion-Aware Student Feedback Portal | Tech Stack: Python, Flask, Scikit-learn, NLP, MySQL

- Built a web-based analytics platform to classify student feedback sentiments using Natural Language Processing.
- Implemented text preprocessing pipelines including tokenization, stop-word removal, lemmatization, and TF-IDF vectorization.
- Trained machine learning models including Logistic Regression, Naive Bayes, and SVM for emotion classification.
- Developed an analytics dashboard for sentiment visualization and feedback trend monitoring.
- Improved feedback analysis efficiency by automating sentiment classification.

Smart Chess AI | Tech Stack: Python, FastAPI, Chess Algorithms

- Developed a chess analysis engine using Minimax and Alpha-Beta Pruning algorithms.
- Built APIs for move prediction, position evaluation, and game analysis.
- Implemented heuristic evaluation functions to improve move quality and decision-making performance.

SentinelAI CyberShield | Tech Stack: AI Security, Python, System Design

- Designed an AI-powered cybersecurity solution for attack detection and response automation.
- Proposed scalable architecture for real-time monitoring, threat analysis, and incident response.
- Developed as a hackathon-focused solution addressing next-generation cybersecurity challenges.

TECHNICAL SKILLS

Programming Languages: Python, Java, C

Backend Development: FastAPI, Flask, REST APIs

Machine Learning & AI: Scikit-learn, NLP, TF-IDF, Classification Models, Generative AI, Model Evaluation

Computer Vision & OCR: OpenCV, Tesseract OCR, pdf2image

Databases: MySQL, SQL

Cloud & DevOps: Oracle Cloud Infrastructure (OCI), Docker, Render, Vercel

Tools: Git, GitHub, Postman, VS Code

Core CS: Data Structures & Algorithms, OOP, DBMS, Operating Systems, Computer Networks

CERTIFICATIONS

Oracle Cloud Infrastructure 2025 Certified Foundations Associate

Oracle Cloud Infrastructure 2025 Certified AI Foundations Associate

Career Essentials in Generative AI – Microsoft & LinkedIn Learning

Career Essentials in Data Analysis – Microsoft & LinkedIn Learning

Cybersecurity Analyst Job Simulation – Tata Group (Forage)

TCS iON Career Edge – Young Professional

TCS iON Career Edge – IT Primer

ACHIEVEMENTS

- Solved 500+ Data Structures and Algorithms problems across GeeksforGeeks and coding platforms.
- Built and deployed multiple AI-powered applications including OCR and NLP-based systems.
- Earned industry-recognized certifications in Cloud Computing, Artificial Intelligence, Data Analytics, and Cybersecurity.
- Active participant in hackathons, technical competitions, and continuous learning initiatives.