

NIKHIL AGARWAL

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📍 Hyderabad, India

SUMMARY

B.Tech Computer Science student with hands-on experience in software engineering, backend development, machine learning, and Generative AI through industry internship and research-driven projects. Skilled in building scalable applications, developing REST APIs, designing AI-powered solutions, and deploying production-ready systems using cloud technologies and modern software development practices. Passionate about solving complex real-world problems through technology, innovation, and continuous learning.

TECHNICAL SKILLS

Languages: Python, Java, C++, JavaScript, TypeScript, SQL

Web & Backend: HTML, CSS, Node.js, FastAPI, REST APIs, Backend Development, API Design

AI/ML & GenAI: Machine Learning, Generative AI, Large Language Models (LLMs), Prompt Engineering, PyTorch, TensorFlow, Retrieval-Augmented Generation (RAG), Vector Embeddings

Data & Databases: Data Analytics, MySQL, PostgreSQL, MongoDB, Redis

Cloud & Tools: AWS, Azure Fundamentals, Linux, Docker, Kubernetes, Virtualization, Git

Core CS: Data Structures & Algorithms, Object-Oriented Programming (OOP), DBMS, Operating Systems, Computer Networks, System Design

EDUCATION

Vellore Institute of Technology, Chennai – B.Tech in Computer Science, **CGPA: 8.71/10** 2023–2027

RanaRoyals Academy, Rajasthan – Class 12 (PCM), **95.5%** 2021–2022

Rana Public School, Rajasthan – Class 10, **91%** 2019–2020

EXPERIENCE

Web Development Intern — MentorKart May 2025 – Jul 2025

- Contributed to the AI Interview Portal by improving interview analysis through prompt engineering, evaluation threshold tuning, and workflow optimization.
- Developed scalable backend modules and REST APIs, improving application performance, reliability, and user experience.
- Collaborated with cross-functional teams in an Agile environment to deliver AI-driven product features.

AI & Cloud Virtual Training — Microsoft Elevate (AICTE Approved) Jan 2026 – Feb 2026

- Developed a cloud-based project using Microsoft Azure while applying AI, cloud engineering, and software development concepts.
- Successfully completed an AICTE-approved virtual internship, earning Microsoft certifications in AI, Cloud, and Cyber-security, along with the program completion certificate.

PROJECTS

Semantic Search Analyzer Python, FastAPI, Vector Embeddings, GMM Clustering

- Built a scalable semantic search system over the 20 Newsgroups corpus using vector embeddings and GMM-based clustering.
- Designed a semantic cache from first principles to optimize retrieval performance without Redis/Memcached.
- Developed and deployed REST APIs using FastAPI for the embedding → clustering → indexing pipeline.

Hybrid Search RAG with Citation Verification Dense Retrieval, BM25, Cross-Encoder Reranking

- Built a hybrid RAG pipeline combining dense retrieval, BM25, cross-encoder reranking, and automated citation verification to reduce hallucinations.
- Improved retrieval accuracy and answer reliability by combining sparse and dense retrieval techniques.

NPTEL Interactive Learning Platform Web Development, Google Analytics

- Designed and deployed an interactive learning platform for NPTEL preparation, used by 200+ students with engagement tracked using Google Analytics.

AI-Powered Women's Healthcare Platform Machine Learning, Healthcare AI

- Developed an AI-powered healthcare platform integrating breast cancer prediction, hospital and NGO support, community features, and personalized wellness recommendations.
- Applied machine learning, data analytics, and automated reporting to improve healthcare insights and decision-making.

CERTIFICATIONS

[🔗 Drive Link](#)

Oracle AI Vector Search Certified Professional (2025)

Oracle Cloud Infrastructure 2025 Generative AI Professional (2025)

Oracle Cloud Infrastructure 2025 Data Science Professional (2025)

LEADERSHIP & RESEARCH

- Conducting research on the impact of missing teeth on the accuracy of deep learning models for Dental Health Abnormality Detection using Medical Image Analysis, with a focus on improving diagnostic robustness.
- Design Lead, Mharo Rajasthan Club (10+ events); Organizing Committee Member, IEEE Student Chapter.