

RAJNISH KUMAR

+91 9471961925 contact.rajnishk@gmail.com chennai, india
0rajnishk 0rajnishk Portfolio

1 Technical Skills

- **Programming & Scripting:** Python, Java, Dart, JavaScript, SQL
- **Machine Learning & NLP:** LLMs (GPT, LLaMA), Retrieval-Augmented Generation (RAG), Knowledge Graphs, Prompt Engineering, NL2SQL, Text Summarization, Semantic Search, QA Systems
- **Computer Vision:** OpenCV, dlib
- **Frameworks & Libraries:** LangChain, Hugging Face Transformers, Flask, FastAPI, Django, PyTorch, TensorFlow, Keras, Pandas, NumPy, Scikit-learn
- **Web & Database:** HTML, CSS, JavaScript, Bootstrap, Vue.js, MySQL, PostgreSQL, Pinecone, FAISS
- **Tools & Deployment:** Git, Docker, AWS, NoMoGuardrails, RESTful APIs, VLLM
- **Optimization & Evaluation:** Quantization, Metadata Curation, Rerankers

2 Experience

Desicrew

Feb 2025 - Present

AI Application Developer

- Developed web application **Accountifi** for managing PowerBI dashboards, enabling admins to publish dashboards and control user access without requiring costly PowerBI subscriptions.
- Built automated web scraping pipelines using multi-agent tools such as **Wikidata**, **Google Custom Search**, **BeautifulSoup**, and **PDF Extractor** to populate 20 data fields for 100k companies, achieving 80% data coverage.
- Developed **HR Chatbot** for internal use, allowing new joiners to interact via voice-to-voice chat in **10+ Indian languages** to understand company policies, rules, and general onboarding information.
- Built **NLDb**, a natural language-to-database analytics system for clients, enabling users to query payment records and generate sales/benefit insights from Excel datasets with **99% accuracy**.
- Deployed all applications on **Google Cloud Platform**, ensuring scalability, and smooth performance.

Indian Institute of Technology Madras

Sept 2024 - Present

Mentor, Modern Application Development II

- Conducted **4 technical bootcamps** on application development integration, reaching **150+ undergraduate students**.
- Evaluated **100+ student projects** as VIVA Examiner.
- Created **10 learning resources(blogs)** and code templates that were accessed by **200+ students**, improving project completion rates.

HILCPS Lab, IIT Madras

Aug 2024 - Feb 2025

Research and Development Intern (Fleet Management)

- Achieved 100% accuracy (up from 60%) in a computer vision model to detect driver head pose movements.
- Designed and developed the Sarathi AI Flutter app to monitor driver behavior, integrating real-time warnings for critical behaviors like drowsiness and distractions using Raspberry Pi data.
- Built a fleet management dashboard for fleet owners, providing real-time graphs, analytics, and alerts for better decision-making and monitoring.
- Integrated engine control unit (ECU) data into the app, enabling comprehensive vehicle diagnostics.
- Developed a microservices-based backend hosted on DigitalOcean and deployed securely using Docker pipelines.

Sudha Gopalakrishnan Brain Centre

Oct 2023 - Aug 2024

AI/ML Intern and Full Stack Developer

[Link](#)

- Designed a **Retrieve-Augment-Generate (RAG) pipeline** to answer brain related queries from thousands of research papers, integrating **Mixtral AI** for accurate and high-performance inference.
- Enhanced document relevance and retrieval accuracy through **metadata filtering** and **Cross-Encoders**.
- Built **scalable Django REST APIs** to handle LLM-driven natural language interactions and processing workflows.
- Developed an **Angular-based dashboard** to visualize real-time LLM analytics, enhancing usability for researchers.
- Processed high-resolution research data, leveraging **FAISS** and **Pinecone** for optimized retrieval and storage.
- Ensured data quality with validation pipelines, improving dataset reliability for downstream AI tasks.
- **Technologies Used:** Django, Python, Angular, Docker, REST APIs, WebSocket, FAISS, Pinecone, Mixtral AI, NemoGuardrails, Cross-Encoders.

3 Projects

Studify

[GitHub Link](#)

- Helped over 10,000 students by creating a centralized repository for accessing and downloading study materials, including notes, archived lectures, and question papers.
- Automated exam evaluation using Python (Flask) to provide detailed reviews, reducing manual workload for students.

Music App

[GitHub Link](#)

- Awarded *Best Project* in the Modern Application Development II (MAD II) course at IITM with a perfect score of 100/100.
- Designed a dynamic music streaming platform with user, admin, and creator functionalities using Flask for the backend and Vue.js for the frontend.
- Integrated JWT Authentication for secure user management and implemented asynchronous tasks using Celery and Redis.

Custom Bot Builder

[GitHub Link](#)

- Built a customizable chatbot framework for domain-specific constraints using Sentence Transformers and similarity search.
- Integrated NemoGuardrails to ensure safe and relevant responses, leveraging Retrieval-Augmented Generation (RAG) for improved performance.
- Developed a Flask backend with asynchronous task management using Celery and a responsive TypeScript frontend.

4 Achievements

- Awarded **Best Project** in Modern Application Development II at IIT Madras.
- Achieved **10 GPA (98%)** in System Commands course at IIT Madras.
- Secured **Second Runner-Up** in Hackathon for developing a Custom Bot Builder.

5 Education

- **Indian Institute of Technology Madras (IITM)**, Chennai, India
Bachelor of Science in Data Science and Applications, **CGPA: 8/10**

2022 - 2026