

# HARIKRISHNAN NAIR

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## SUMMARY

AI Engineer with over 1.5 years of experience developing practical, production-ready AI solutions using large language models, retrieval systems, and conversational interfaces. Experienced in building secure, scalable systems for real-world use cases, including voice-driven applications and HIPAA-compliant data workflows. Skilled in integrating cloud technologies and automation tools to deliver end-to-end solutions that are both efficient and adaptable.

## PROFESSIONAL EXPERIENCE

Data Engineer at CrossAsyst Infotech

MAY 2024 – Present

**Designed 15+ AI solutions** (voice assistants, chatbots, automated workflows) for enterprise clients, ensuring alignment with business goals through regular stakeholder collaboration.

Built HIPAA-compliant FHIR data processing pipeline for clinical data (93%+ patient eligibility accuracy on 500+ records in ~15s)

**Implemented multi-level Retrieval-Augmented Generation (RAG)** for ICD-10 medical coding (lowering AWT from several minutes to seconds, significantly reducing manual effort)

**Developed voice-based AI assistant handling 20 to 30 calls/day** (integrated with Zoom and VAPI / AWS Nova Sonic) Communicated one-on-one with stakeholders to understand requirements.

Mentored a small team of 5 developers and guided architectural decisions for scalable AI systems.

AI R&D Intern at Incrify ai

Dec 2023 – Jan 2024

Worked as an intern at incrify.ai, a cutting-edge startup specializing in AI solutions, in the R&D department.

Contributed to the development of a few impactful projects:

- **Audio and Video Analysis:** Spearheaded the analysis of audio emotions, leveraging advanced algorithms to extract and interpret emotional cues from audio content.

- **AI course Builder:** Developed a course building system that can generate courses with just a simple input which helps users learn concepts from scratch to advance.

Collaborated with cross-functional teams to integrate AI features and gather stakeholder requirements

## TECHNICAL SKILLS

- Programming: Python, SQL
- ML/AI Frameworks: PyTorch, Scikit-learn, LangChain, LangGraph, MCP, A2A, OpenCV
- Cloud/DevOps: AWS (Bedrock, OpenSearch, Sagemaker, Knowledge Base), Groq, FastAPI.
- Databases/Tools: FAISS, PGvector, MySQL, PostgreSQL, n8n, VAPI, ElevenLabs, gTTS, edge\_tts
- CI/CD: Data Version Control (DVC), MLFlow, Grafana & Prometheus, Docker, Git, Github Actions, Kafka
- Data Processing: Pandas, NumPy, FHIR data standards

## PROJECTS

### WORKER COMPENSATION VOICE ASSISTANT

Technical Stack: VAPI, GPT-4o, AWS Bedrock [Sonnet Claude 3.5], n8n.

- Integrated the voice platform (VAPI) with Zoom to enable an AI-powered telephone assistant.
- Built the assistant using GPT-4o with n8n-orchestrated workflows and AWS Bedrock model for natural language processing.
- Leveraged existing service APIs (with custom adjustments) to fetch and process data for user queries.

### ICD-10 CODE RETRIEVAL SYSTEM

Technical Stack: LangChain, FAISS, AWS Bedrock [Sonnet Claude 3].

- Engineered a system to automatically identify ICD-10 codes from doctor's notes using LangChain's ReAct approach.
- Generated N-gram search queries and synonyms from notes; used FAISS to search across 75k+ ICD-10 codes for candidate matches.
- Combined vector retrieval and AWS Sonnet inference to output accurate codes, reducing manual coding time from minutes to seconds.

## CLINICAL TRIAL ELIGIBILITY PARSER

Technical Stack: LangGraph, LangChain, AWS Bedrock [Sonnet Claude 3.5], FAISS, RAG.

- Developed a parser to automate trial eligibility, using LangChain to interpret and simplify criteria from diverse formats (JSON, text, PDF).
- Conducted FAISS-based vector similarity search on HIPAA-compliant patient data to find potential matches for eligibility terms.
- Established inclusive and exclusive filtering pipelines (via AWS Sonnet LLMs generating SQL queries) and merged their outputs to finalize eligible patient lists (~93% accuracy).

## ADMINISTRATIVE AUTOMATION PLUGIN

Technical Stack: n8n, AWS Bedrock [Sonnet Claude 3.5], FastAPI.

- Created a voice/text-driven automation plugin allowing users to configure tasks via natural language in a chat interface.
- Example workflow: scheduling a meeting by voice - system gathers details (attendees, date/time, agenda) and validates them through backend calendar APIs.
- Implemented backend connectivity using FastAPI, enabling both voice notes and text commands to trigger n8n-orchestrated workflows.

## EDUCATION

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### JAIN UNIVERSITY – ONLINE

*Master of Computer Applications (AI)*

JUL 2024 – JUL2026

### EKNATH B. MADHAVI SENIOR COLLEGE

*Bachelor of Science in Information Technology*

Aug 2019 – Mar 2022

## PROFESSIONAL COURSES

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### ITVEDANT EDUCATION PVT. LTD

*Course in Data Science & Analytics with AI*

Dec 2022 – FEB 2024

## CERTIFICATIONS

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### AWS Certified AI Practitioner (AIF-C01)

From AWS      Dec 2024 – Dec 2027

Certificate ID Number: [196bd0e5-9453-4668-893f-42ef6a81ff66](#)

### Data Analysis with Python

From IBM      Jul 2023

Certificate ID Number: 85b935bdb2b74e3e83ca27d430750026

### Python Certification Training

From Udemy      May 2021

## SOFT SKILLS

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- Effective Communication
- Problem Solving abilities
- Teamwork
- Critical Thinking