Om Nagvekar

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🔗 https://omnagvekar.github.io/ in Om Nagvekar ⌗ OmNagvekar

About me

Aspiring AI professional with robust expertise in Python, API development, and advanced NLP techniques like Retrieval-Augmented Generation and Agentic AI. Proven track record in research and hands-on projects, consistently delivering quantifiable improvements. Seeking opportunities to leverage my skills to drive innovative AI solutions.

Education

KIT's College of Engineering (Autonomous), Kolhapur   *2021-2025*
B.Tech in Computer Science (Artificial Intelligence and Machine Learning) Engineering

- GPA: 8.41/10.0 Equivalent to 79.86%
- **Coursework:** AI, Linear Algebra, Statistics and Probability, Machine learning, Deep learning,

Experience

Associate Data Scientist Intern   *On-site, Pune*
AlgoAnalytics Private Limited   *Aug 2025 – Present*

- Working on Financial Statistics and Modeling.

Research Intern   *Hybrid, Kolhapur*
Shivaji University (Nanoscience Department)   *Aug 2024 – June 2025*

- Applying machine learning techniques (time series analysis and change point detection) to material science data.
- Developing a RAG-based system for research paper analysis to extract key scientific insights, potentially increasing data extraction efficiency by 50%.

Machine Learning Intern   *Remote*
ArthaVedh Consulting Pvt Ltd   *June 2024- Dec 2024*

- Contributed to the development of machine learning models and synthetic data generation, improving training workflows by streamlining data pipelines by over 30%.

Intern – Business Contract Validation   *Remote*
Intel Unnati Industrial Training Program   *May 2024 – Aug 2024*

- Automated validation of hundreds of business contracts by classifying and comparing them against standard documents, reducing manual review time by an estimated 40%.
- Implemented a RAG pipeline with a fine-tuned Phi-3 mini LLM to accurately identify deviations.

Publications

Managing Spam Images on Android: An Approach Utilizing Machine Learning and NLP   July 2024

Om Nagvekar Sumeet Kurbetti, Parth Sarnobat, Uma Gurav, and Tanvi Patil.

10.1007/978-981-97-2550-2_59 ↗

Projects

AI Garbage Prediction API (SIH 2024 Project)   *AI_Predictions_API ↗*

- Designed a FastAPI-based API to analyze images and videos in real time for garbage prediction.
- Using advanced LLM (ollama Phi: 3mini and Florence-2) to classify and quantify waste, achieving an estimated improvement in monitoring efficiency 20%.

○ Tools used: Python, FastAPI, YOLOv11

Business Contract Validation Tool (BCVT)   *BCVT* ↗

○ Built an automated tool for classifying and validating contracts using a TensorFlow model, RAG pipeline, and HuggingFace embeddings.

○ Achieved 92.5% semantic similarity, 88.7% response relevancy, and 85.3% factual correctness across test cases.

○ Integrated Gemini AOI (Gemini 2.0-Flash) for clause-level evaluation and Streamlit UI for PDF visualization.

○ Tools used: Python, TensorFlow, LlamaIndex, Gemini AOI, Streamlit, ragas.

Chef-Agent Knowledge-Graph Cooking Assistant   *Chef Agent* ↗

○ Developed a streaming AI "Chef" agent using FastMCP + FastAPI, orchestrated via LangGraph workflows and backed by a Neo4j recipe knowledge graph.

○ Implemented end-to-end tools for web_search (Tavily/DuckDuckGo), web_scraping (FireCrawl + BeautifulSoup), sandboxed Python execution, natural-language → Cypher graph queries, and URL-to-graph recipe ingestion.

○ Enabled session personalization with in-memory/Redis store and auto-summarization of long conversations for enhanced user experience.

○ Tools used: Python, FastAPI, FastMCP, LangGraph, Neo4j, Redis, FireCrawl, BeautifulSoup.

Technologies

Languages: Python, Java

AI & ML Frameworks: PyTorch, TensorFlow, Keras, LangGraph, Langchain, smolagents, FastMCP

NLP & RAG: Retrieval-Augmented Generation (RAG), LangChain, LlamaIndex, fine-tuning LLMs, LLM

API Development & Tools: FastAPI, Docker, Model Context Protocol (MCP)

Research & Data Processing: Data preprocessing, exploratory analysis, model evaluation, pandas, numpy

Version Control: Git, GitHub

DevOps: Docker, Kubernetes, AWS

Additional: Android Development, SQLite

Certifications and Awards

○ LSAT (Lab Setup Automation Tool) PBL Day Winners

○ ML and AI Workshop - Technex,IIT Varanasi

○ Runner-up, Pioneer 2022 Runner-Up (Prakalp)

○ Data Analytics Process Automation Virtual Internship (SEP - NOV 2023)

○ Japanese Language N5 level Certification NAT 5Q

○ Google AIML Virtual Internship (JAN – MAR 2024)

○ Amazon ML Challenge 2024 ranked 277 out of 2430 teams in top 12 percent.

○ SIH 2024 Grand Finalist

○ Introduction to LangGraph by Langchain Academy

○ AI Agents Fundamentals by Hugging Face

Languages

English : Professional working proficiency

Japanese : Elementary proficiency N5 level