

# Sanket Hiwarkhede

Data Scientist AI/ML

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## PROFILE

AI-focused Data Scientist with hands-on experience in agentic AI, LangChain, LangGraph, large language models (LLMs), RAG and custom model development. Well-versed in EDA, machine learning, deep learning, Natural Language Processing (NLP), Python, SQL, Pandas, NumPy, and OpenCV

## PROFILE SUMMARY

- Proficient in developing intelligent **AI agents** using **LangChain, LangGraph, RAG** with expertise in **prompt engineering, tool integration** and **autonomous** task execution.
- Expert in **Python, ML, and DL** for building **audio analysis** models using **Librosa**, with experience in tasks such as **music classification, genre prediction, and audio feature** extraction.
- Expert in **OpenCV, ML, DL** and **Python** for real-time Object Detection and **Predictive Analytics** on Data.
- Skilled in designing and building **APIs** for seamless interaction with **AI/ML** models, enabling efficient integration and deployment across applications.
- Proficient in using Python scripts to connect with **MongoDB** and manipulate datasets effectively.
- Skilled professional with expertise in **Statistical Analysis** and framework development.
- Proficient in developing end-to-end solutions using **Large Language Models (LLMs)**, including the design and deployment of intelligent **chatbots**.
- Master in leveraging **ChatGPT** for code optimization, efficient task automation, and solving complex problems with precision.

## PROFESSIONAL EXPERIENCE

<b>Digikore Studio</b> <i>ML Engineer</i>	Oct 2024 – present Pune, India
<b>Web Minds IT Solution</b> <i>Data Scientist</i>	May 2022 – Oct 2024 Pune, India

## PROJECTS

### 1. IMAS: I Made A Song – An Intelligent System for Song Quality Evaluation

**Domain - Music Analysis**

**Role - ML Engineer**

**Description -IMAS (I Made A Song)** is a music analysis system that evaluates song quality based on musical structure and lyrical content. It analyzes chord progression, MIDI data, lyric sentiment, and various other audio and textual features. These features are used to train machine learning and deep learning models for song quality prediction, leveraging tools such as Librosa, Mido, NLP transformers, and more. All components are integrated into a streamlined end-to-end pipeline for efficient and automated processing.

**Responsibilities –**

- Chord progression analysis to assess harmonic structure
- MIDI data extraction for rhythm, pitch, and tempo understanding.
- Extracted features from chord progression, MIDI files, and lyrical sentiment for comprehensive song analysis.
- Used Python's Pandas and NumPy packages to perform Data Cleaning, Feature Scaling and Feature Engineering.
- Optimized the pipeline for performance, scalability, and future expansion.
- Fully integrated pipeline combining all modules into a single executable workflow for seamless end-to-end processing.

### 2. Built a Super Agentic AI System with Role-Based and Autonomous Capabilities.

**Domain - AI Technology**

**Role - ML Engineer**

**Description -** Built a Super Agentic AI System capable of handling diverse tasks through a unified, role-based, and autonomous framework. The system integrates multiple tools and models to enable **“text-to-everything”** functionality within a single intelligent platform. It features specialized role-based agents such as stock analysis, content generation, and media creation each optimized for its respective domain. Utilized LangChain and LangGraph to orchestrate agent workflows, manage memory, enable dynamic tool selection, and support context-aware decision-making. The architecture is modular, scalable, and designed for adaptive optimization based on task complexity and user requirements.

**Responsibilities –**

- Designed and developed a role-based autonomous agent architecture using LangChain and LangGraph to manage complex workflows and decision-making processes.
- Integrated multi-tool and multi-model systems to support end-to-end “text-to-everything” functionality within a unified platform.
- Implemented memory and context handling to enable seamless interaction and continuity across agent sessions.
- Engineered a modular and scalable pipeline for dynamic tool selection and adaptive agent behavior based on user input and task complexity.

## ADDITIONAL PROJECTS

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### ChatRAG: AI Chatbot with Retrieval-Augmented Generation

#### Technology – Python, Qdrant, LangChain

**Description** – Built a chatbot that gives accurate answers by combining search and AI-generated responses. Used Qdrant to find relevant information quickly and LangChain to manage how the chatbot retrieves and replies. Designed the system to support easy integration with various AI models for different use cases

## SKILLS

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### Programming language

Python, HTML, CSS, C#, C+

### Algorithms

ML Algorithms, DL Algorithms

### Web Framework

.Net, Serenity, Bootstrap, Django

### Container Orchestration

Docker

### Database

MS SQL, MS Excel, MS Office, MongoDB, Redis

### Data Visualization Tool

Tableau, Metabase, GitHub

### Operating System

Linux ubuntu, Windows Family

### Libraries

NumPy, Pandas, Scikit-learn, Seaborn, Matplotlib, TensorFlow, NLTK, OpenCV, Librosa, Mido

## ADDITIONAL SKILLS

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- Data Science & Artificial Intelligence
- Machine Learning & Deep Learning
- Natural language processing (NLP)
- Computer Vision
- AI Agents
- Fast API
- Software Developing
- ChatGPT
- LLM (Large Language Model)

## EDUCATION

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- Bachelor of Engineering in Automobile from North Maharashtra University Jalgaon (7.99/10)
- HSC Computer Science from Maharashtra State Board of Education
- SSC from Maharashtra State Board of Education

## CERTIFICATES

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Full Stack Data Science & AI — From Naresh IT Hyderabad • Nestle E-Learning 2024 | Sustainability

## AWARDS

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### National Level PUBG Tournament Winner

Godavari Foundation's Godavari College Of Engineering Jalgaon

## LANGUAGES

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- English
- Hindi
- Marathi

## PERSONAL DETAILS

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- Name - Sanket Subhash Hiwarkhede
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- Marital Status - Single / Unmarried
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