

SAHIL ABHIJEET SAWANT

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AI Engineer & Product-Driven Systems Builder specializing in **shipping AI solutions**, from **classic ML pipelines and real-time analytics** to **GenAI/RAG platforms and LLM-powered products**. Known for turning ambiguous ideas into production systems fast, with clean architecture, secure deployments, and measurable outcomes.

TECHNICAL SKILLS & TECHNOLOGIES:

1. Programming & Data:

- 1.1. Python, SQL, Power BI, Pandas, NumPy, Polars, SciPy, Parquet/Unstructured Data & Semi-Structured Data

2. Backend & Systems:

- 2.1. FastAPI, Flask, REST APIs, PostgreSQL, Streamlit, Tkinter, Cryptography (Fernet/Hazmat), Logging, Caching, CI/CD basics

3. Machine Learning:

- 3.1. Time-Series Analytics, Anomaly Detection, Forecasting, Regression, Clustering, XGBoost, LightGBM, Scikit-Learn, Matrix Profile (STUMPY)

4. GenAI, LLM & Knowledge Systems:

- 4.1. Retrieval-Augmented Generation (RAG), LLM Architecture, LangChain, HuggingFace, Prompt Engineering, Context Grounding, LLM-Powered Data Analytics, PandasAI

5. Local LLMs (Ollama):

- 5.1. Llama 3.2 (3B/8B), Llama 3.1, Mistral, Phi-3 Mini, Gemma, Qwen-2, Neural Chat, StableLM

6. Vector Databases & Embeddings

- 6.1. ChromaDB, SentenceTransformers, Embedding Optimization, Semantic Search

7. Document AI & NLP Pipelines:

- 7.1. PDF/DOCX Parsing, Layout Preservation, Controlled Translation, Multilingual NLP, Document Intelligence.

8. Data Processing & Analytics:

- 8.1. SQL, Pandas, NumPy, Polars, SciPy, Parquet, Power BI

EXPERIENCE:

AI/ML & Backend Engineering Intern | Commtel Networks | Dec 2024 - Jul 2025

- **Built a production-grade Anomaly Detection System** using Matrix Profile, MAD, EWMA, Rolling Z-Score, and Trend Decomposition; reduced analysis time from *20 minutes* → *milliseconds* for 300+ node data.
- **Developed predictive models** for CPU utilization forecasting and hardware lifespan using Linear Regression, XGBoost, LightGBM, and K-Means.
- **Designed and scaled backend architecture** for internal digitization systems using Flask, FastAPI, PostgreSQL, and REST APIs.

- **Built real-time visualization tools** including a Tkinter-based anomaly dashboard with interactive trend overlays.
- Enhanced engineering standards by implementing **robust error handling, configuration modules, logging frameworks, caching**, and converting prototypes into production-ready modules.
- Developed secure pipelines using **Fernet encryption and Hazmat cryptography practices**.

Certified GenAI Trainer | St. John College of Engineering , Palghar | Nov 10 – Nov 21, 2025

- Delivered an intensive **GenAI hands-on bootcamp** for 100+ 2nd & 3rd year AIML engineering students.
- Trained students in **LLMs, Prompt Engineering, RAG, and Local LLM Deployment (Ollama)** with practical, real-world projects.
- Designed an **industry-aligned GenAI curriculum** covering LangChain workflows, HuggingFace models, and applied GenAI implementation.
- Recognized for leadership, clarity, and high-impact delivery — showcasing strong capability to run **independent GenAI training programs/agency**.

Python AI developer | Raptim Research | Dec 2025 - Present

- Building **production-grade GenAI systems** focused on **Retrieval-Augmented Generation (RAG)**, document intelligence, and multilingual NLP.
- Implemented **local-first LLM architectures** using open-source models to ensure **data privacy, compliance, and offline deployment**.
- Designed **end-to-end RAG pipelines** for large-scale PDF/DOCX data using optimized chunking, embeddings, and vector search to deliver **hallucination-resistant outputs**.
- Developed a **controlled document translation system** preserving layout, tables, headers, references, and non-translatable sections with high semantic accuracy.

PROJECTS (AI/ML, DATA SCIENCE, & DATA ENGINEERING)

- **Secure Local Data Analyst – Streamlit + Ollama + PandasAI:** Built a fully private, local GenAI data analytics platform using Streamlit, PandasAI, and Ollama with fallback safety, DataFrame intelligence, and multi-format ingestion (CSV/XLSX/Parquet).
- **Anomaly Detection System (CommTel Networks):** Production-optimized engine using Matrix Profile, Trend Decomposition, MAD, EWMA, and Z-Score analytics; achieved millisecond-level performance for high-volume time-series data.
- **Laptop Health Monitoring with Prediction & Anomaly Detection (Real-Time API):** Real-time metric monitoring system using Python, psutil, Matrix Profile (STUMPY), and predictive models (XGBoost, LSTM).
- **Alarm Detection & Classification System (FastAPI ML Pipeline):** Built a real-time ML classification API for alarm signals using Python, FastAPI, and Scikit-Learn with robust preprocessing and feature extraction.
- **Instance Segmentation Using YOLOv8:** Developed a Python application for instance segmentation, demonstrating strong computer vision and deep-learning capabilities.
- **Matrix Profile Engine for Large-Scale Time-Series (CommTel):** Optimized Matrix Profile for subsequence similarity, anomaly scoring, and large-window analysis in production scenarios.

- **Enterprise RAG-Based Knowledge Assistant (Raptim research):**
Built a high-accuracy, hallucination-resistant RAG system for enterprise knowledge bases using optimized document parsing, embeddings, and vector retrieval with source-grounded responses. Implemented local LLM inference with strict context filtering and retrieval ranking to ensure data privacy, low latency, and high precision.
- **Multilingual Document Translation & Localization Platform (Raptim research):**
Engineered a format-preserving PDF/DOCX translation pipeline with selective translation control, maintaining layout, tables, headers, references, and numbering translating up to 8 Indian languages.
Designed semantic validation layers to prevent meaning drift and formatting corruption; built using fully open-source NLP tooling, deployable as internal service or desktop app.

EDUCATION

● Computer Engineering	K.C College of Engineering	CGPA: 7.82	(2024)
● XII (HSC)	Wamanrao Muranjan Jr. College	62%	(2020)
● X (SSC)	Sou Laxmibai English Medium School	82%	(2018)

CERTIFICATIONS AND ONGOING COURSES

- LLM and GenAI Masterclass - Udemy
- Python for Machine Learning and Data Science Masterclass - Udemy
- Microsoft Power BI
- SQL for Data Analysis
- Python for Data Science
- Machine Learning A-Z .

ACHIEVEMENTS (Social & Sports)

- Awarded **Best Rotaract Member (2022–2023)** — Rotaract Club of K.C College of Engineering
- Member — **National Service Scheme (NSS), 2022–2023**
- Multiple awards in **Football, Kabaddi, Cricket, Badminton**
- Founded & led the **Leather Cricket Team**, awarded Best Batsman and All-Rounder (2021–2024)