

SAHIL ARUN BODKE

Python Backend and AI Engineer | Generative AI, RAG and LLM Applications
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PROFESSIONAL SUMMARY

Computer Engineering graduate (B.E., SPPU, CGPA 8.34/10, First Class with Distinction) building production Python and Generative AI systems. Shipped a live food-delivery platform serving real users: three Android apps on Google Play plus a web platform on a single REST API, owning architecture, database design and releases end to end. Built Retrieval-Augmented Generation systems with grounded citations and measured retrieval quality using RAGAS. Prior internships in Python full-stack development and application security. Seeking Python Backend, Machine Learning or AI Engineer roles.

PROFESSIONAL EXPERIENCE

Full-Stack and AI Developer (Client Engagement) — Best Food Services

Pune, India | June 2026 – Present | Live: 3 Android apps on Google Play + bestfoodservices.in

- Designed, built and shipped an end-to-end food-delivery product suite: three live Android apps on Google Play (Customer, Vendor, Delivery Partner) on a single Python REST API backend, alongside the bestfoodservices.in web platform, serving **[N] registered users and [N] orders processed**.
- Architected the backend as Python REST services with JWT authentication and role-based access control across three user types, covering the full order lifecycle: menu management, cart and checkout, payment flow, order assignment, live delivery tracking and push notifications.
- Modelled and optimised the relational schema across users, vendors, menus, orders and delivery assignments; tuned queries and indexes to keep order-placement and tracking endpoints responsive under concurrent traffic.
- Built vendor and admin dashboards for menu updates, live order queues, status transitions and sales reporting, and automated recurring operations including order-status notifications and daily sales summaries, replacing manual phone and messaging coordination.
- Owned the complete release cycle: Play Store submission and policy review, versioned staged rollouts, crash and error monitoring, bug triage and iterative improvements driven by real user feedback.

Engineering Trainee, Python Full-Stack Development — ProAzure Software Solutions Pvt. Ltd.

Pune, India | December 2024 – February 2025

- Engineered a dual-interface weather-forecasting platform (Flask web application and Tkinter desktop GUI) over the OpenWeatherMap and WeatherAPI REST APIs, implementing an API response caching layer that eliminated redundant third-party calls and improved average response time by **approximately 30%**.
- Parsed and normalised JSON API responses to deliver live temperature, humidity and wind-speed data, with Matplotlib visualisations for historical trends.
- Built structured exception handling and input validation across all modules, sustaining 99% uptime through QA cycles in a modular PEP 8-compliant codebase with Git version control and peer code reviews.

Cybersecurity Intern, VAPT and Security Operations — Redynox

Remote / Pune, India | 2024

- Executed vulnerability assessments on web applications and network infrastructure using Nessus and OpenVAS, and performed penetration testing with Metasploit, Burp Suite and Nmap, contributing to a reduction of over **40% in critical vulnerabilities**.
- Monitored and triaged suspicious network traffic in Splunk (SIEM) for incident-response documentation, and collaborated on OWASP Top 10-aligned mitigations.

TECHNICAL PROJECTS

Multimodal RAG Knowledge Assistant with Voice Interface | Python, FastAPI, LangChain, FAISS, Streamlit, RAGAS

- Built an end-to-end Retrieval-Augmented Generation assistant over a corpus of **[N] documents** (PDF, DOCX, TXT, Markdown, HTML), answering natural-language technical-support questions grounded in that corpus.
- Implemented cross-encoder reranking over dense retrieval, raising **recall@5 from [X]% to [Y]%** and RAGAS faithfulness from **[A] to [B]** on a 50-question golden evaluation set.
- Reduced median query latency to **[N] ms** through embedding caching and asynchronous retrieval, serving inference via a FastAPI backend with a Streamlit operator interface.

- Enforced grounded generation: every answer returns a numbered passage-citation panel, and the system abstains explicitly when retrieved context cannot support an answer rather than hallucinating.
- Added a voice layer with speech-to-text capture and spoken answers for hands-free use. Containerised with Docker, tested in a GitHub Actions CI pipeline.

Hybrid Multimodal Fake-News Detection Platform | Python, PyTorch, FastAPI, Transformers, Computer Vision

- Built a hybrid classifier fusing text, image-forensics and propagation-pattern signals to label news content as Real, Fake or Unverified, achieving [X]% accuracy and [Y] F1 on a [N]-sample dataset.
- Served inference through a FastAPI API consumed by a Streamlit analyst dashboard, returning a verdict, calibrated confidence score and class-probability breakdown, with a threshold policy routing low-confidence predictions into a manual review queue.
- Added an explainability panel surfacing the tokens and modalities driving each decision, and a human-in-the-loop correction workflow capturing reviewer verdicts as labelled retraining data.

Next-Gen Industrial Safety System — Final-Year B.E. Capstone | Python, Computer Vision, IoT, Embedded Firmware

- Built an AI-powered industrial worker-safety system combining custom IoT wearable hardware with a Python software stack, monitoring PPE compliance and worker vitals on the factory floor in real time.
- Trained and deployed a computer-vision model detecting PPE compliance (helmet, vest, safety gear) from live camera feeds at [X]% precision, automatically flagging non-compliant workers.
- Designed the wearable hardware layer as a microcontroller-based sensor node with firmware streaming telemetry to the backend, and a cloud-hosted dashboard with a multi-tier emergency alert workflow escalating to supervisors when readings cross hazard thresholds.
- Published as "Next-Gen Industrial Safety: AI-Driven Wearable Equipment Detection and Emergency Alert", IJSART Vol. 11 Issue 11 (November 2025), ISSN 2395-1052. Accepted at ICIISM-2026.

Blockchain Academic Credential Verification System | Solidity, Ethereum, Hardhat, Ethers.js, React

- Developed a permissioned-blockchain platform where universities issue tamper-evident academic credentials that employers verify in seconds without depending on the issuing institution being online.
- Implemented three role-based portals (Issuer, Student Wallet, public Verifier), anchoring credential hashes and issuer signatures on-chain with did:ethr decentralized identity and non-custodial MetaMask login.

TECHNICAL SKILLS

AI and Machine Learning: Python, PyTorch, TensorFlow, Scikit-learn, LangChain, LlamaIndex, Hugging Face Transformers, Retrieval-Augmented Generation (RAG), prompt engineering, tool and function calling, agent orchestration, chunking and reranking, grounded generation, hallucination control, RAGAS evaluation, NLP, computer vision, OpenAI / Groq / Ollama APIs

Vector and Semantic Search: FAISS, ChromaDB, sentence-transformer embeddings, hybrid retrieval, document parsing and ingestion (PDF, DOCX, TXT, Markdown, HTML)

Backend and APIs: FastAPI, Flask, Django, REST API design and integration, JWT authentication, role-based access control, microservices, Streamlit, Node.js, React, Postman

Databases: PostgreSQL, MySQL, MongoDB, SQLite, schema design, query and index optimisation

Engineering and DevOps: Docker, Git, GitHub Actions (CI/CD), pytest, Linux, Bash, Agile / Scrum, Google Play Console release management, unit testing

Programming Languages: Python, JavaScript, SQL, C++, Solidity, Bash, HTML5, CSS3

Additional: Ethereum, Solidity smart contracts, Hardhat, Web3 / Ethers.js, decentralized identity (DID). Application security: OWASP Top 10, VAPT, Burp Suite, Nmap, Wireshark, Nessus, Splunk (SIEM)

EDUCATION

Bachelor of Engineering (B.E.), Computer Engineering

Savitribai Phule Pune University (SPPU), Jaihind College of Engineering, Pune, India | June 2026

CGPA: 8.34/10 | Final-Year SGPA: 9.63/10 | First Class with Distinction

Relevant coursework: Data Structures and Algorithms, DBMS, Computer Networks, Operating Systems, OOP, Machine Learning, Artificial Intelligence

CERTIFICATIONS

Certifications: Cisco Networking Academy — CyberOps Associate, Cybersecurity Essentials. Deloitte Australia — Data Analytics Job Simulation (Forage, 2025). Python for Everybody.

Languages: English, Hindi, Marathi. **Interests:** Applied AI research, agentic AI systems, IoT, cybersecurity research