

VARUN B P

AI/ML ENGINEER | ARTIFICIAL INTELLIGENCE & DATA SCIENCE

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[Portfolio](#) | [LinkedIn](#) | [GitHub](#)

PROFESSIONAL SUMMARY

AI/ML Engineer specializing in production-grade, full-stack AI systems — from Machine Learning model training and evaluation in PyTorch to Agentic Retrieval-Augmented Generation (RAG) pipelines and Large Language Model (LLM) applications. Builds end to end across FastAPI/PostgreSQL backends and React/Next.js frontends, with Docker and Git tying deployment together. Focused on Generative AI, multi-agent architectures, and explainable ML, with a bias toward systems that are secure, well-tested, and built to run in production, not just a notebook.

TECHNICAL SKILLS

Languages & Programming: Python, SQL, TypeScript, JavaScript
Machine Learning & Deep Learning: PyTorch, Model Training & Evaluation, Model Deployment, Transfer Learning, Scikit-learn, XGBoost, CatBoost, SHAP, Explainable AI, NLP
Generative AI & Agentic Systems: Retrieval-Augmented Generation (RAG), Large Language Models (LLMs), Agentic AI, AI Agents, LangChain, LangGraph, Model Context Protocol (MCP), Prompt Engineering, Embeddings, Hugging Face, FAISS, Vector Databases, Reranking
Backend & Web: FastAPI, REST APIs, React, Next.js, NextAuth, JWT, PostgreSQL, SQLite
Tools & Infrastructure: Git, Docker, CI/CD, Linux, Cloud Deployment (Vercel), RBAC, FHIR R4, OMOP CDM

PROJECTS

Aurevia Health AI — Clinical Intelligence Platform 2025
[Demo](#) | [Code](#)

- Developed a privacy-first Clinical Decision Support (CDS) platform on React/FastAPI, orchestrating a LangGraph-based multi-agent RAG pipeline to support real-time clinical decision workflows end to end.
- Trained and evaluated 3 tabular/ensemble model architectures — CatBoost, XGBoost, and TabICLv2 — for clinical prediction tasks, paired with SHAP-based explainability and a multi-organ digital twin; ensured compliance with FHIR R4 and OMOP CDM v5.4 healthcare interoperability standards, RBAC, and PII redaction.

Tech: React 19, FastAPI, LangGraph, Ollama, FHIR R4, OMOP CDM v5.4, CatBoost, XGBoost, SHAP, RAG, PostgreSQL/SQLite, Docker, JWT, RBAC

NexaMind AI — Enterprise Agentic RAG Workspace 2025
[Demo](#) | [Code](#)

- Engineered a full-stack Agentic RAG workspace using Next.js/React and FastAPI/Python, enabling real-time streaming AI conversations and multi-step agent workflows across multiple document types and concurrent user sessions.
- Designed an end-to-end document ingestion pipeline (parsing, chunking, vector indexing via Chroma/Milvus) integrated with MCP tool calling, NextAuth/JWT authentication, and RBAC/SSRF hardening for secure multi-user access.

Tech: Next.js 16, React 19, TypeScript 5, Tailwind CSS 4, FastAPI, Python 3.11, SQLAlchemy, PostgreSQL/SQLite, Chroma/Milvus, Redis, NextAuth, JWT, RAG, LLMs

Aurelia AI — Multi-Tenant AI Customer Support Platform 2026
[Demo](#) | [Code](#)

- Built a full-stack, multi-tenant AI customer support platform with Qdrant-backed vector knowledge bases and SSE-streamed chat responses across isolated tenant workspaces.
- Shipped an embeddable TypeScript chat widget and admin dashboard with LLM routing across 4 providers (OpenAI, Anthropic, Google, DeepSeek), secured via JWT/bcrypt authentication and SSRF-protected ingestion.

Tech: Next.js 14, React 18, TypeScript, FastAPI, Python 3.11, SQLAlchemy 2.0, PostgreSQL/SQLite, Redis, Qdrant, Vector Search, RAG, LLMs, Docker, JWT

EDUCATION

Visvesvaraya Technological University (VTU) B.E. in Artificial Intelligence & Data Science CGPA: 7.9/10	Dec 2022 – May 2026 Karnataka, India
Hoysala PU College Pre-University Certificate — Science (PCM) Aggregate: 78%	Apr 2020 – Apr 2022 Karnataka, India
SBS School SSLC Aggregate: 90.56%	2019 Karnataka, India

CERTIFICATIONS

▪ ChatGPT Prompt Engineering for Developers — DeepLearning.AI & OpenAI	▪ AI Fundamentals — IBM SkillsBuild
▪ Generative AI Fundamentals Accreditation — Databricks	▪ Explore Generative AI — Microsoft Learn

LANGUAGES

English (Full Professional) | Hindi (Professional) | Kannada (Native) | Telugu (Professional)