

Mehar Singh Bawa *AI Engineer*

✉ bawamehar@gmail.com ☎ (970) 566-1937  [linkedin.com/in/bawamehar](https://www.linkedin.com/in/bawamehar)  github.com/bawamehar

PROFILE

AI Engineer with 6 years building **autonomous AI agents, multi-agent orchestration systems, and scalable GenAI solutions** at Capgemini and CSU. Delivered production systems spanning LangGraph agent orchestration, RAG pipelines, tool calling, memory management, and AWS-native deployment.

SKILLS & CERTIFICATIONS

ML / AI: Python (pandas, scikit-learn), LangChain, LangGraph, OpenAI API, RAG, NLP, LLM, PyTorch, HuggingFace Transformers, Claude Code, MCP, Vector Databases (ChromaDB), CrewAI, PySpark, Cursor

MLOps, Deployment & BI: FastAPI, Streamlit, MLflow, Docker, CI/CD, Git/GitHub, Power BI

Cloud & Data: AWS (Lambda, ECS, EC2, ELB, S3, EBS, EKS, CloudWatch, IAM), Snowflake, Terraform, SQL, PostgreSQL

Certifications: AWS Certified Developer - Associate, Certified SAFe 6 Product Owner

MACHINE LEARNING & AI PROJECTS

Agentic AI Resume Screening System

- Built a multi-agent system using **OpenAI API**, **LangChain**, and **LangGraph** with agent orchestration, planning, and function calling, improving matching accuracy by **~30%**.
- Reduced LLM hallucination rate by **~25%** by implementing **Pydantic** guardrails and responsible AI practices, optimizing cost monitoring and output quality in production.
- Implemented automated evaluation pipelines and observability using **LangSmith**, tracking performance analytics and resolving failure modes to ensure production reliability.

Financial Sentiment Analysis using FinBERT

- Fine-tuned a foundation model (**FinBERT**) using **PyTorch** and **HuggingFace** on regulated financial data, achieving **96.5% F1** and 100% precision through rigorous evaluation.

Diabetes Prediction Project

- Designed and optimized a classification model using **XGBoost** and **LightGBM**, achieving **82.1% ROC-AUC** through rigorous statistical modeling and feature engineering.
- Built a model monitoring system using **FastAPI** and **MLflow** model registry, tracking performance and supporting drift detection and retraining workflows.

EXPERIENCE

Graduate Research Assistant, Colorado State University

02/2025 – 05/2026

- Architected a multi-agent classification pipeline using **OpenAI** and **Groq Llama**, classifying 164 responses across 109 cases into **7 clusters** for fast, accurate knowledge access.
- Engineered a Gatekeeper agent with RAG and **context/memory management**, cutting inference costs by **~65%** through intelligent semantic filtering before downstream agent processing.
- Prototyped and scaled a **RAG pipeline** using **GPT-5** across 41 technical documents, iterating to achieve **100% citation accuracy** for high-stakes structured knowledge extraction.
- Applied a **CAMEL AI** multi-agent simulation with tool-calling interfaces and **SQLite** memory management, using **AgentOps** for production-scale LLM trace monitoring across 3 persona-driven agents.

Data & Cloud Consultant, Capgemini

02/2020 – 01/2025 | Pune, IN

- Established scalable data infrastructure for S-Group, engineering large-scale pipelines across **35M+ financial records**, diagnosing inefficiencies and eliminating a **4-hour processing lag** with measurable business impact.
- Eliminated **20+ hours** of monthly manual intervention by building an **AWS Lambda** event-driven pipeline with robust cloud integrations, optimizing data pipeline performance and sustaining **100% uptime** through automated production monitoring.
- Cut false-positive rate by **60%** by tuning an **AI-driven anomaly detection system** (Dynatrace Davis), building alerting logic that flagged deviations and demand spikes in production environments.
- Decreased system failures by **70%** by applying FMEA methodology across a global, multi-time zone team, grouping failure patterns and surfacing insights in **Power BI** dashboards to drive root-cause remediations.
- Reduced deployment lead time by **40%** by implementing **CI/CD workflows** and **Terraform IaC** on AWS ECS with container orchestration, establishing automated versioning, rollback, and testing practices.

EDUCATION

MS in Computer Information Systems, Colorado State University

01/2025 – 05/2026

- **Teaching Assistant** for Analytics and AI in Business & Member of **Dean's List** for Spring 2025, Fall 2025.

B-Tech in Computer Science and Engineering, SRM University

05/2019