

Animesh Agrawal

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GenAI Engineer focused on building scalable LLM systems, AI agents, and RAG pipelines that automate workflows, enhance knowledge discovery, and improve enterprise operations.

EDUCATION

Master of Data Analytics , Specialization in Big Data Systems	Aug 2024-Dec 2025
The Pennsylvania State University , Pennsylvania	GPA: 3.98
Bachelors in Technology , Mechanical Engineering Specialization in Energy	July 2017-Jun 2021
Vellore Institute of Technology , India	GPA: 3.4

TECHNICAL SKILLS

Libraries: NumPy, Pandas, Seaborn, Scikit-Learn, TensorFlow, PySpark, Selenium, LangChain, LangGraph

Technology: Cloud (Azure and GCP), MySQL, Docker, Git, Vector Database, LLMs

Techniques: embeddings, Retrieval Augmented Generation (RAG), Data Ingestion, Machine Learning

Skills: Deep learning, Statistics

PROFESSIONAL EXPERIENCE

Gen AI Engineer | Rezolve.ai | OH, USA Jan 2026-Present

- Architected a **hybrid semantic search engine** combining dense (**OpenAI text-embedding-3-large**) and sparse embeddings with **multi-stage reranking** with **Pinecone** vector database and **BGE reranker v2-m3**, achieving **92% answer accuracy** and reducing support ticket volume by **40%**.
- Engineered** multi-intent classification system using **GPT-4.1** structured outputs (**JSON Schema**) and **sentiment analysis** detecting **8+ intent types** simultaneously, achieving **85% escalation accuracy** and reducing customer abandonment from **30% to 8%**.
- Designed and deployed** intelligent **workflow automation** system with **GPT-4 entity extraction** and **Pinecone boosted queries**, automating **65% of service requests** end-to-end and reducing completion time by **78%** (from **20 minutes to 4.5 minutes** average).

Gen AI Intern | Rezolve.ai | OH, USA July 2025-Aug 2025

- Engineered** an end-to-end **Microsoft OneNote data ingestion pipeline** using Microsoft Graph API, FastAPI, Azure Service Bus, and Pinecone vector DB; implemented async streaming traversal with incremental differential sync and HTML-to-Markdown conversion, indexing **50,000+ pages across 300+ notebooks** and expanding enterprise knowledge base coverage by **35%**, enabling broader AI-powered search across organizational content.
- Developed autonomous AI agent using **LangGraph** orchestration framework and multi-model architecture (**GPT-4o + Claude Opus 4**) that intelligently processes **10,000+ IT service desk tickets**, autonomously identifies automation opportunities with **87% confidence accuracy**, and generates comprehensive strategic reports with **zero human intervention**.

Research Assistant | The Pennsylvania State University | PA, USA Sep 2024-Dec 2025

- Built a image-generation & photo-analysis tool leveraging **Gemini** that lets stylists preview personalized hairstyles in seconds, **increasing revenue by 20% and customer satisfaction by 35%**.
- Developed and implemented **web scraping** solutions through **Selenium and BeautifulSoup**, achieving a data collection rate of **10 pages per minute**.

Senior Data Analyst | Leverage Edu Tech Pvt Ltd | India Feb 2021-Jun 2024

- Designed over **500 features** for data lakes leveraging **Google Cloud BigQuery**, enabling the creation of machine learning models and enhancing predictive capabilities.
- Streamlined processes and increased revenue by identifying and **eliminating fake application submissions** leveraging outlier **detection method and Scikit-learn**, leading to a **14% reduction in operational costs**.
- Enhanced marketing efficiency by analysing blog campaign performance with **Python (Pandas, NumPy, Seaborn)**, delivering actionable insights that eliminated underperformers and **reduced expenses by 30%**.

PROJECTS

AI Agent for Automated statement of purpose (SOP) Generation System with GenAI and LangChain.

- Built an AI-powered SOP generator with LangChain and GenAI that crafts context-aware, personalized statements, slashing reviewers' workload and editing time 35% while elevating the applicant experience.

Building a Scalable Data Pipeline for U.S. Election Donations Analysis

- Architected a scalable KNIME and PySpark election donation warehouse, optimizing high throughput ETL pipelines and benchmarking relational versus Hadoop architectures using Hive and HDFS to deliver rapid statewide insights into donation trends, refunds and donor demographics.

AWARDS

- Awarded the Chancellor's Scholarship by Pennsylvania State University for academic excellence and leadership.
- Recognized with ESOPs for outstanding contributions and high-impact performance within the organization.