KRISHNENDRA PRAKASH

Generative AI | 13+ Years of Software Engineering & ML Expertise

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# PROFESSIONAL SUMMARY

Machine Learning engineer with over 13 years of expertise spanning the full ML lifecycle—model design, training, fine-tuning, performance benchmarking, and production deployment. Combines 4 years of mobile application development with 8 years of Python-driven data science. For the past 4 years, has specialized in Generative AI, beginning with BERT and T5 and advancing to cutting-edge LLM solutions.

## Generative AI & LLM Fine-Tuning

* + Resource-efficient adaptations using LoRA and qLoRA
  + Custom workflows for domain-specific performance gains

## Advanced RAG Techniques

* + Corrective RAG for iterative answer refinement
  + Self-RAG pipelines for autonomous retrieval and generation
  + Graph-RAG integrations leveraging knowledge graphs

## Agentic Design Patterns

* + Multi-step orchestration combining LLM reasoning with tool use
  + Robust error-handling and fallback strategies

## ML Benchmarking & Deployment

* + End-to-end evaluation of latency, throughput, and accuracy
  + Scalable hosting of LLMs and NLP services

## Natural Language Processing & Knowledge Graphs

* + Custom NLP pipelines: tokenization, parsing, entity recognition
  + Knowledge-graph construction and semantic QA
* **Graph & Vector Databases**: Proficient in Neo4j, Milvus, Qdrant, Pinecone, and Weaviate for building scalable knowledge graphs and semantic search pipelines.
* **Distributed Systems**: Expertise in designing and deploying high-performance, distributed systems with robust fault-tolerance and scalability.
* **Big Data & Storage**: Hands-on experience with managing data in NoSQL and distributed environments like Postgres, MongoDB.
* **Microservices & Containers**: Experienced in designing and deploying microservices using Docker and orchestrating them with Kubernetes.
* **Programming**: Proficient in JavaScript, Python, applying best practices in modular, maintainable software design.
* **Agile Leadership**: Skilled in applying Agile methodologies, managing sprints, and leading teams through rapid iterative development cycles.
* **Data Governance**: Strong knowledge of data governance principles including data classification, lineage, quality, privacy, and retention policies.
* **Cloud Platforms**: Experience with AWS, Azure for scalable cloud-based ML and application deployments.

## Key Technologies & Expertise

Python · Machine Learning · Generative AI · BERT · T5 · LoRA · qLoRA · Corrective RAG · Self-RAG · Graph-RAG · Agentic Design Patterns · LLM Benchmarking · Natural Language Processing · Knowledge Graphs · Scalable LLM Hosting

# CORE SKILLS

* **Languages Frameworks:** Python, LangChain, LangGraph, LlamaIndex, Azure AutoGen, TensorFlow, Keras, PyTorch, Numpy, ML-Flow, LLMOps-vLLM, Guardrails
* **Machine Learning:** Generative AI, RAG, Graph RAG, Agentic Design patterns, Natural language processing, Knowledge Graph, LLM, Transformers
* **Database:** Chroma, FAISS, Pinecone
* **Tools/Technologies:** OpenAI, REST API, SVN, Git
* **Cloud:** AWS - Amazon Bedrock, EC2, S3, Azure

# WORK HISTORY

**Analyst, Generative AI**

## Spirit Airlines

*07/2021 - Current*

* **AI Trip Planner:** A conversational AI that ingests user preferences (dates, budget, loyalty status, past trips) and dynamically generates end-to-end itineraries—flights, hotels, ground transport, dining—tailored to each traveler. It will Increases ancillaries revenue, drives loyalty engagement, reduces planning friction.
* **Tech Stack**: OpenAI GPT-4 API, LangChain

**CAG**

* **Audit Draft Generator:** A generative RAG pipeline that ingests financial statements, transaction ledgers, and compliance checklists to draft first-pass audit reports—highlighting key variances, risk areas, and regulatory citations in structured prose. It will Slashes manual drafting time by 50%, enforces consistency across audit teams, accelerates review cycles.

**Tech Stack**: LangChain, OpenAI GPT-4

**Senior Software Developer**  *12/2017 - 06/2021*

* **Multilingual Support Bot:** A RAG-powered assistant that translates and synthesizes support tickets in Spanish (and other languages), generating accurate English summaries for agents and back-translations for travelers, while preserving tone and context. It will Streamlines global support, reduces translation costs, improves response accuracy.
* **Tech Stack**: LangChain, OpenAI GPT-4

**Application Developer**  *03/2015 - 12/2017*

* Initiated code reviews within the team to improve overall code quality and minimize potential errors during deployment phases.
* Developed custom solutions for clients based on their unique business requirements and objectives.
* Assisted with training junior developers, providing guidance on best practices in application development.
* Designed and developed application scripts for test scenarios.

**Software Developer** *02/2014 - 03/2015*

* Improved software efficiency by troubleshooting and resolving coding issues.
* Saved time and resources by identifying and fixing bugs before product deployment.
* Updated old code bases to modern development standards, improving functionality.
* Contributed to a positive team environment through effective communication, problem-solving, and collaboration skills.

**Software Developer**  *07/2013 - 02/2014*

* Contributed to open-source projects to sharpen skills while giving back to the developer community.
* Developed user-friendly interfaces for seamless user experience in multiple software products.

**Software Engineer**  *02/2012 - 06/2013*

* Developed scalable and maintainable code, ensuring long-term stability of the software.
* Integrated new technologies into existing systems, increasing capabilities and improving overall performance.
* Developed reusable components that significantly reduced development effort on multiple projects.
* Implemented effective debugging strategies, resulting in fewer software defects and increased reliability.

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# CERTIFICATION

* Generative AI for Everyone
* Supervised Machine Learning: Regression and Classification