

## **Company Overview**

Acme Analytics is a data-driven organization focused on building AI-powered solutions. The company specializes in machine learning, data analytics, and intelligent automation. Acme Analytics was founded in 2018 and operates across multiple industries including finance, healthcare, and retail.

## **AI and Machine Learning**

Artificial Intelligence (AI) refers to the simulation of human intelligence in machines. Machine Learning is a subset of AI that enables systems to learn from data without being explicitly programmed. Common machine learning techniques include supervised learning, unsupervised learning, and reinforcement learning.

## **Retrieval-Augmented Generation (RAG)**

Retrieval-Augmented Generation (RAG) is a technique that combines information retrieval with large language models. Instead of relying solely on a model's internal knowledge, RAG retrieves relevant documents from an external knowledge base and uses them to generate more accurate and grounded responses.

## **Vector Databases**

Vector databases are specialized databases designed to store and search vector embeddings. These embeddings represent semantic meaning of text, images, or other data. Qdrant is a popular open-source vector database optimized for similarity search and used widely in AI-powered retrieval systems.

## **Large Language Models**

Large Language Models (LLMs) are neural networks trained on vast amounts of text data. Examples include GPT, Claude, and LLaMA. These models can perform tasks such as text generation, summarization, translation, and question answering.

## **Evaluation and Observability**

Evaluating LLM outputs is critical for production AI systems. LangSmith provides tools for tracing, monitoring, and evaluating LLM calls, prompts, and responses to ensure reliability and reduce

hallucinations.