YEARLING AI

AI-POWERED Q&A BASED ENTERPRISE DATA RETRIEVAL

Elevate Intelligence.
Deliver Impact.

INTRODUCTION

Modern enterprises accumulate vast amounts of structured and unstructured data, including databases, emails, messages, and documents. Retrieving relevant information quickly is crucial for daily operations but remains a complex challenge. Traditional query implementation is time-intensive, requiring custom-built interfaces and backend APIs that connect different applications.
Our AI-powered solution allows users to ask questions in natural language—through text or speech—and instantly retrieve relevant information.

CUSTOMER STORY

A leading grocery supplier struggled with inefficient data retrieval, slowing sales operations. A senior sales rep noted, "I spent hours manually pulling data from multiple systems for simple inquiries—it was frustrating and time-consuming." Key challenges included:
- Slow access to critical business data (orders, suppliers, inventory, pricing).
- Dependence on manual database queries, requiring ongoing development support.
- Sales reps lacked real-time insights for quick decisions.
- Administrators manually processed over 100 daily emails, repeatedly searching past records for responses.

OUR SOLUTION

YearlingAI built an AI-driven data retrieval system, seamlessly integrated as a microservice on Google Cloud Platform (GCP). Users can access information via voice or text, eliminating manual database queries. AI-powered search, using NLP, Knowledge Graphs, and CypherQL, ensures accurate results. Automated email responses extract answers from past inquiries, reducing workload. With a microservice architecture, the solution integrates effortlessly into existing systems.

How It Works
The system converts voice or text queries into structured searches using speech-to-text and NLP. AI generates Cypher queries via Knowledge Graphs and Neo4j for precise data retrieval. Intent classification and entity recognition refine results, delivering real-time insights via text or speech. A fine-tuned BERT model automates email responses, streamlining repetitive inquiries.

KEY TECHNOLOGY & FRAMEWORK

Technology

- Knowledge Graphs & Ontologies
- Speech-to-Text
- CypherQL (Query Language for Graphs)
- Intent Classification & NER Models

Framework

- Neo4j (Graph Database)
- Whisper AI (Speech-to-Text)
- Hugging Face Transformers (Intent Classification, NER, Email Q&A Models)
- Nvidia Nemo (Text-to-Speech AI)

CUSTOMER BENEFITS

- Instant Access to Over 50 Query Types – Users can retrieve diverse business insights in real-time.
- Significant Time Savings – Eliminates the need for manual database queries and custom UI development.
- 80% Reduction in Email Handling Time – AI-generated responses streamline customer communication.
- Enhanced Decision-Making – Sales representatives receive timely insights without technical intervention.

ABOUT YEARLING AI

We build AI that works. At YearlingAI, we bring deep technical expertise to solve complex problems with machine learning, natural language processing, and generative AI. From intelligent automation to custom LLM agents, we design, build, and deploy solutions that drive results. As a Google Cloud partner, we specialize in cloud-native development—but also support AWS, Azure, and hybrid environments. Whether you're a growing startup or a global team, we deliver practical AI solutions that scale with your needs.