

Intelligent Search

A Multiuse Solution for Education

Introduction

Organizations are generating vast amounts of data that needs to be efficiently managed and retrieved. Whether it's documents, records, case info, or multimedia content, ensuring quick and accurate access to information is crucial for rapid decision making.

Traditional enterprise search systems have provided basic keyword-based retrieval, but they often fall short in delivering comprehensive results that meet users' expectations, especially in today's AI-augmented world. This is where Retrieval Augmented Generation (RAG) and Large Language Models (LLM) come into play, revolutionizing the way employees and citizens search and get answers from mountains of government data.

RAG incorporates advanced techniques such as natural language processing (NLP), machine learning (ML), and artificial intelligence (AI) to enhance the search experience by not only retrieving relevant content but also generating high-quality output based on the user's query. This groundbreaking approach not only saves time but also enhances productivity by automating tasks that were previously manual and labor-intensive.

Inadequacies of Legacy Search

Legacy search techniques have several inadequacies and challenges that hinder their effectiveness in today's enterprise landscape. Some of the key issues include:

- **Poor Accuracy:** Relying solely on keyword matching often gives results that are irrelevant or incomplete, especially when searching for complex concepts or phrases.
- **Limited Functionality:** Basic search tools lack advanced features, such as NLP, semantic search, or ML, which optimize search results by understanding the intent behind the query.
- **Inefficiency:** data is often scattered across multiple platforms and systems, making it challenging and time-consuming to get relevant answers.
- **Inability to Retrieve Unstructured Data:** Legacy data search techniques typically struggle with the indexing and retrieval of unstructured data, hindering the ability to gain insights from these types of data sources.



Intelligent Search that Transforms Data into Knowledge

A modern intelligent enterprise search solution offers several advantages and is particularly useful for tasks in data searching, data analysis, and real-time aggregation of information. Advantages include:

- Tailored generative AI experiences which use your private data for optimal insights
- Ability to combine a vector database, semantic search, and RAG to contextualize LLM responses
- Integration with public and private LLMs, LangChain, and open APIs to extend capabilities
- Real-time answers that deliver great citizen experience and potentially save lives in situations where seconds matter
- Full-text search of robust data types with personalization of results
- Performance, resiliency, and scalability at a global level
- Analytics, Visualizations, and Aggregations
- Trusted security, access controls, and compliance with U.S. government guidelines

Your Partner In Intelligent Enterprise Search

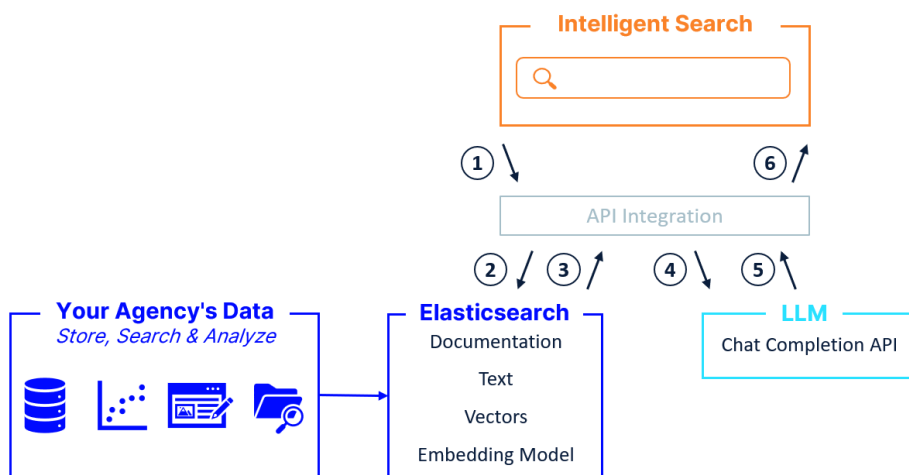
The ability to access relevant information quickly is essential in educational settings for effective learning and decision-making. Educational institutions can benefit from intelligent search solutions that help students, teachers, and staff find the information they need, regardless of its source. By connecting data from multiple platforms and using advanced algorithms, intelligent search provides precise answers, even to complex questions. This enhances learning, reduces time spent searching for information, and supports better academic and administrative outcomes.

Whether it's a student working on a research project, a teacher preparing lesson plans, or an administrator retrieving institutional data, intelligent search ensures everyone can find the resources they need swiftly and easily. With features like natural language processing, semantic search, and machine learning, these systems continuously improve search accuracy, learning from user interactions to deliver more personalized results over time.

Intelligent Search Framework

Swish provides the technology, services, and long-term support to ensure your success with our Intelligent Search Framework. The key technology components of the framework are:

- **Swish Intelligent Search:** hardened UI libraries and API integrations to securely integrate search into your apps.
- **Elasticsearch:** Elasticsearch, self-hosted or in a FedRAMP cloud, provides indexing, analysis and search capabilities.
- **Large Language Model (LLM):** LLM, self-hosted or in a FedRAMP cloud, provides generative AI capabilities.
- **Your Data:** Your structured and unstructured data is integrated into Elasticsearch indexes for real-time search. This includes configuring ingest mechanisms, indexing, data security settings, and more.



How the framework functions

1. API accepts user questions and generates request for Elasticsearch.
2. Search request sent to Elasticsearch.
3. Documentation body and original URL are returned to API.
4. API call is made to LLM Chat Completion API.
5. Generated response returned to API.
6. API adds original documentation source URL to generated response and prints it to the screen for the user.

Benefits

An Intelligent Enterprise-wide Search solution provides public sector and DoD agencies with:

- **Intelligent Mission Insights:** personalized contextual answers up to 10x faster.
- **Better User Experience:** 69% average improvement in employee and customer satisfaction with search¹.
- **Improved Productivity:** saves approximately 24 hours per year, per employee².
- **Reduced Latency and Costs:** with a caching layer similar responses are faster and free from GenAI token charges.
- **Trustworthy Security:** based on Elastic's robust security architecture which is trusted by U.S. Government agencies to handle their most sensitive data and workloads.

¹Source: Elastic Results That Matter Report of 1,400 Elastic cu Elastic

²Source: Forrester Total Economic Impact Study 2022

Cisco Uses AI-powered Enterprise Search for Better Insights and Answers

Cisco faced the challenge of retrieving information quickly from millions of documents to support their customer service and website search functionalities. They chose Elastic to enhance their search capabilities using artificial intelligence (AI).

By integrating Elasticsearch's ESRE and RAG capabilities with a public cloud provider's Generative AI services, Cisco achieved significant improvements in search speed, accuracy, and user experience across its internal and external applications. With the adoption of Elastic's technology, their support engineers can now easily find relevant information, such as similar case information, product bugs, and knowledge articles, to accelerate the resolution of customer issues.

This has resulted in up to 73% faster search queries, a 90% resolution rate of support requests through the new platform, and a savings of \$5,000 in support engineer hours per month. The AI-powered search also ensures a richer search experience for Cisco.com users by delivering easy-to-consume results with direct links to relevant content, enhancing engagement and satisfaction.

By leveraging AI-powered search capabilities, Cisco has achieved significant benefits in customer support, user engagement, and operational efficiency. Furthermore, it provides a delightful search experience for its customers, partners, and employees. Go to <https://www.elastic.co/customers/cisco> to read the full case study.

Swish Success Services

Swish brings decades of experience in engineering solutions, helping numerous public sector and DoD agencies navigate the complexities of operationalizing enterprise solutions. We are vendor-agnostic, which means we prioritize finding the best solution for your unique needs, versus pushing specific products.

Our team of certified professionals objectively assess your environment, requirements, and long-term operational needs. We utilize a continuous improvement approach with Plan, Implement, Manage, and Optimize phases which focus on providing rapid value and long-term success. Swish values our client relationships and are here to provide support over the lifecycle of the solution. We can develop a customized Intelligent Search solution that effectively safeguards your critical data while optimizing costs and maximizing efficiency.

Plan	Implement	Manage	Optimize
Assess	Installation	Remote Management	Health Checks & Tuning
Design	Integration	Upgrade Assistance	Customization
	Adoption	Ongoing Enablement	Maturity Assessments

The Swish Difference

Swish's expertise in enterprise search solutions allows us to efficiently deliver more accurate search results. Additionally, our solutions meet federal security and compliance requirements, giving you peace of mind. Contact Swish today at info@swishdata.com to learn more about how we can enhance your enterprise search, while ensuring security and compliance.

Procurement Pathways



Ask us about our Flexible Payment Options: Financing, Extended low-cost-entry plans, base-plus options with annual expenditures, CapEx and OpEx models, MSP and 'as a Service' (aaS) offerings.

Compliance and Certifications

Swish strictly adheres to a security-first mindset and carefully vets and selects solutions which meet our stringent Fed-ready and secure supply chain requirements.



FedRAMP



ADA VPAT 2.0 for Section 508 Compliance



Multiple DoD/IC ATOs



FIPS 140-2



Swish is a provider of technology solutions and engineering services to the U.S. Public Sector with a focus on high-quality outcomes for customers. Since 2006, Swish has delivered high-performance solutions and services to the Public Sector market ensuring that customer's digital service capabilities, performance, and security exceed expectations and requirements. Swish is a Service-Disabled, Veteran-Owned and HUBZone certified Small Business.

Learn More: <https://swishdata.com/about/sled/>