



# Augmented AI Assistants

## Mission-Ready Intelligence

Revolutionizing Information Retrieval



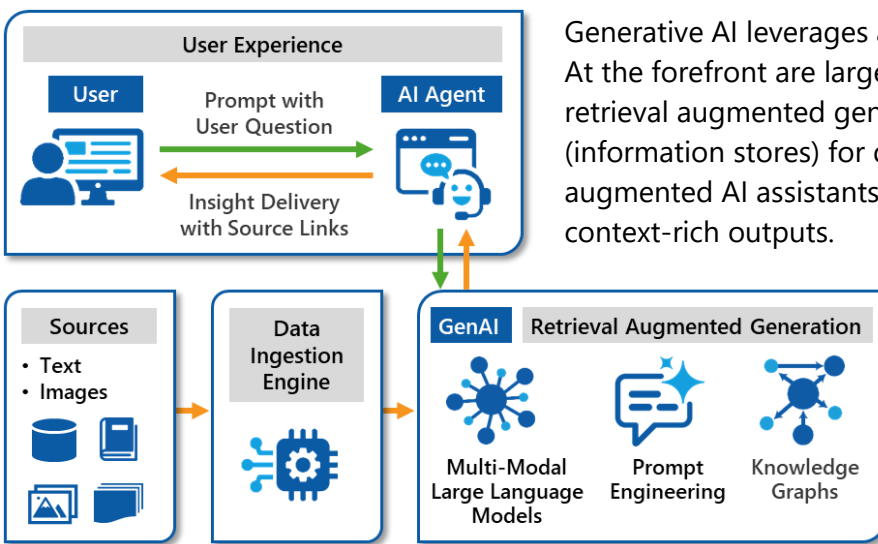
Illumination Works (ILW) builds artificial intelligence (AI)-powered assistants that interpret questions, query relevant sources, and deliver a domain-specific, authoritative response to support faster, smarter decision making across a range of defense functions.



AI-powered assistants provide natural language information retrieval, a transformative capability enabling defense professionals to access domain-relevant insights with the speed and simplicity of a conversation for increased readiness, improved mission outcomes, reduced cognitive fatigue, and speed to insights.

- Intelligence Amplification**  
 Works alongside users to streamline tasks, improve efficiencies, and ease human workload
- Conversational & Engaging**  
 Users easily explore large datasets and documents through natural conversation chats—no code
- Explore Protected & Public Content**  
 Unified search across secure enterprise data and public web results
- Information Dominance for the Enterprise**  
 Service-oriented approach enables organizations to manage the content ingested to the system
- Interrogate, Connect, Understand**  
 Customized, multi-modal large language models (LLM) generate domain-specific content
- Transparent by Design**  
 Search results include links to sources used, empowering users to verify information results
- Context through Crosslinking**  
 Interrogates massive amounts of documentation to make connections and glean insights for context
- Human-in-the-Loop Validation**  
 Interactive chat interface empowers users to guide and refine results in real time

### Transforming How Users Interact with Data for Real-Time Insights



Generative AI leverages advanced models to create original content. At the forefront are large language models (LLM), enhanced by retrieval augmented generation (RAG) and knowledge graphs (information stores) for data curation that feeds information to the augmented AI assistants to deliver more accurate, explainable, and context-rich outputs.

- Securely hosted LLMs (local or cloud) or connect to organizational LLMs
- Custom LLM integration with RAG and graph-based architectures
- Advanced prompt engineering and contextual tuning
- Iterative feedback and continuous learning loops

Data Curation, Rapid Information Retrieval, and Continuous Learning

AI assistants powered by natural language information retrieval are essential tools for operational superiority. ILW delivers the GenAI to power the conversation—generating responses based on user input and trained knowledge. RAG and knowledge graphs enrich the chatbot by pulling in relevant, up to date information and domain-specific context. The chatbot provides a friendly, conversational agent embedded in the user interface (UI) to deliver the insights with human-in-the-loop capabilities and links to sources for verification.



**LLMs** – Powerful tools trained on massive datasets to understand and generate human-like text



**RAG Framework** – User access to complex internal documentation via chat-based interface



**Natural Language Understanding** – Conversational interaction interprets specific terms, acronyms, and context



**Semantic Search** – Matches meaning, not just key words, across structured and unstructured data



**Context Aware** – Understands mission context for tailored responses to ensure relevance and compliance



**Continuous Improvement** – Implements feedback loops to learn, evolve, and improve over time

AI assistants are not meant to replace human expertise—there here to amplify it. Defense personnel are highly trained and experienced; what they need is a faster, smarter way to access and apply the knowledge they already have.

ILW prioritizes ethical and trustworthy AI

- Human-in-the-loop validation
- Bias detection and content filtering
- Data governance and access control frameworks

## AI Assistant Case Studies



- **Odin™ Risk Management Framework (RMF)** – Deep neural networks, LLMs, and RAG with chat-like user interface (Navy SBIR)
- **Odin™ Acquisition Milestone Documentation Automation (AMDA)** – GenAI with human-in-the-loop functionality, searchable documents, and automatic crosslinking with relevancy score (Air Force SBIR)
- **Data Analytics as a Service (DAaaS)** – AI chatbot capabilities with LLMs enhanced by real data through RAG; RAG as a Service (Air Force)
- **Theia™ User Experience** – Chat-like interface enabling user search by text or image to focus on informative data leveraging multi-modal LLMs (Army SBIR)

The future of analytics is conversational, intelligent, and automated

Are you ready to embrace it?

Reach out to learn more...



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