

# Deductive: Revolutionizing AI

## The Challenge: Limitations of Standard AI Solutions

In the rapidly evolving world of artificial intelligence, businesses are eager to harness the power of generative AI models. However, mainstream techniques like Retrieval-Augmented Generation (RAG) come with significant drawbacks:

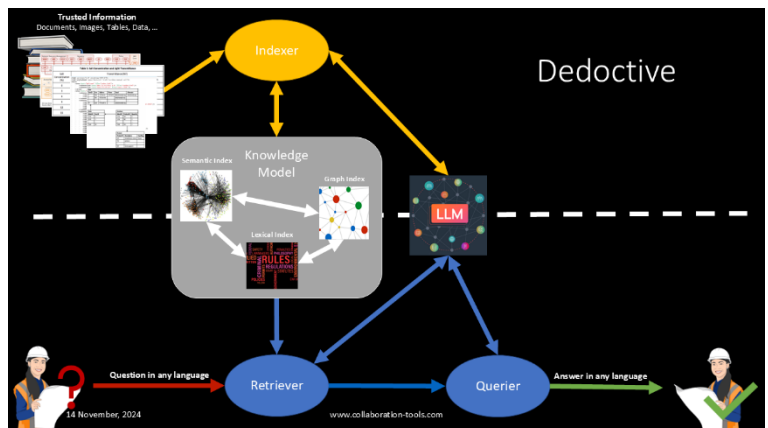
- **Inaccurate Responses:** Standard RAG systems can misinterpret data, presenting incorrect answers due to missing information, noisy sources, or conflicting details in retrieved documents.
- **Incomplete Insights:** They may provide partially correct answers, overlooking relevant information within the knowledge base.
- **Parsing Difficulties:** Complex documents, such as PDFs with embedded tables and charts, often aren't processed correctly, leading to loss of crucial information.
- **Format Inconsistencies:** Outputs may not align with the requested format, causing confusion and inefficiency.
- **Data Overload:** Large volumes of data can overwhelm ingestion pipelines, hindering performance and scalability.
- **Security Risks:** Executing code without proper safeguards can damage host servers or result in data loss.
- **Lack of Trustworthiness:** Information provided by AI chatbots is often unverified and cannot be fully trusted, posing risks to decision-making.

## The Solution: Deductive's Unique Approach

**Deductive** addresses these challenges head-on with an innovative enhancement of standard RAG. Here's how we solve the problems uniquely:

### 1. Advanced Knowledge Modeling

- **Dual-Layer LLM Pipeline:** Unlike standard RAG which uses a single Large Language Model (LLM) to index factual sources directly, Deductive employs a two-layer approach:
  - **First LLM:** Creates a sophisticated knowledge model with multiple, orthogonal types of indexed data store.
  - **Second LLM:** Pre-processes user questions and compiles precise answers by interrogating these data stores semantically and lexically.



### 2. Provenance with Hyperlinks

- **Verified Sources:** Each answer includes valid hyperlinks to source facts, ensuring transparency and allowing users to verify information easily.
- **Trust Building:** Deductive builds trust and reliability in AI-generated responses by providing direct access to authoritative sources.

### 3. Uncovering Hidden Connections

- **Deep Analysis:** Our system can reveal relationships and insights that standard AI misses, even when connections are not explicitly stated in the data.
- **Enhanced Decision-Making:** Identifying hidden links enables businesses to uncover new opportunities and make more informed decisions.

### 4. Visual Exploration of Knowledge

- **Interactive Interface:** Users can visually explore related facts and data points connected to their queries.

- **Enhanced Understanding:** This feature promotes a deeper comprehension of complex information, aiding in analysis and strategy development.

## 5. Seamless Handling of Complex Data

- **Accurate Parsing:** Deductive effectively processes complex documents, including PDFs with embedded tables and charts.
- **Consistent Formatting:** Outputs match the requested format, ensuring clarity and usefulness.

## 6. Scalability and Efficiency

- **Robust Ingestion Pipeline:** Designed to handle large volumes of data without performance degradation.
- **Secure Execution:** Protects against risks of running executable code, safeguarding your systems.

## Real-World Examples: Deductive in Action

### 1. Accurate Information on Air Source Heat Pumps

#### Standard AI Response:

- May incorrectly state that air source heat pumps "work with underfloor heating, radiators, and hot water systems" without caveats.
- Provides unreliable hyperlinks, often to amateur blogs.

#### Deductive's Response:

What are the pros and cons of air source heat pumps?

##### Pros of Air Source Heat Pumps:

1. Renewable energy source by extracting heat from the air, which is considered low carbon due to the efficient use of electricity from renewable sources. [Home energy fact she...Because the air \(or... EXPLORE](#), [Home energy fact she...Because the air \(or... EXPLORE](#), [Home energy fact she...And since the UK now... EXPLORE](#)
2. Economical heating option for well-insulated homes. [Home energy fact she...Air source heat pump... EXPLORE](#)
3. Low maintenance costs and reliable operation, often lasting 20 years or more with periodic servicing. [Home energy fact she...Maintenance costs fo... EXPLORE](#), [Home energy fact she...Your installer shoul... EXPLORE](#)
4. High efficiency as they can provide more than 1 unit of heat energy for every unit of electricity consumed, known as the coefficient of performance (CoP). [Home energy fact she...To power itself, the... EXPLORE](#), [Home energy fact she...But because the heat... EXPLORE](#)

##### Cons of Air Source Heat Pumps:

1. Increased fuel bills may occur after installation compared to traditional heating systems. [Retrofitting your ho...source pump. You sho... EXPLORE](#)
2. Demand for gradual temperature adjustments, requiring different controls than conventional systems. [Home energy fact she...Heat pumps are desig... EXPLORE](#), [Home energy fact she...This means they need... EXPLORE](#)
3. Installation may need additional space for larger units compared to conventional boilers. [Retrofitting your ho...source pump. You sho... EXPLORE](#)
4. Potentially under or oversizing issues if the heat pump is not closely matched to the design load of the building. [Domestic Heat Pumps ...Whilst this has adva... EXPLORE](#), [Domestic Heat Pumps ...In such a situation ... EXPLORE](#)

- Explains that air source heat pumps only work with certain radiators and may require replacement of existing heating infrastructure.
- Includes hyperlinks to authoritative sources like government and industry publications.
- Offers options to visually explore related knowledge for each point.

### 2. Revealing Hidden Connections Between Arnold and Rosemont College

#### Standard AI Response:

- Vague connections through academia or philanthropy suggested, without factual basis.

#### Deductive's Response:

- Highlights the familial connection to the Kennedy family, revealing an indirect link.
- Demonstrates the ability to find non-obvious relationships within the data.
- This is critical in healthcare, engineering, construction, law, security, and many other areas.

How is Arnold connected to Rosemont College?

Arnold Schwarzenegger is connected to Rosemont College through the following relationship:

1. Arnold Schwarzenegger is the spouse of Maria Shriver. [[Arnold Schwarzenegger...](#)]
2. Maria Shriver is the daughter of Eunice Kennedy. [[Maria Shriver...](#)]
3. Eunice Kennedy is the sister of Patricia Kennedy. [[Eunice Kennedy...](#)], [[Patricia Kennedy...](#)]
4. Patricia Kennedy is an alumna of Rosemont College. [[Patricia Kennedy...](#)], [[Rosemont College...](#)]

Explore response:



Improve answer by changing your configuration:



Provide feedback:

