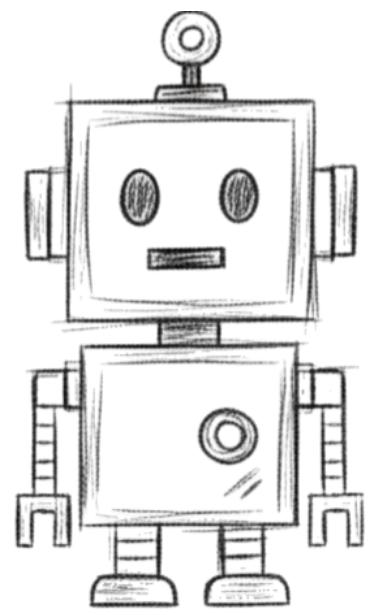


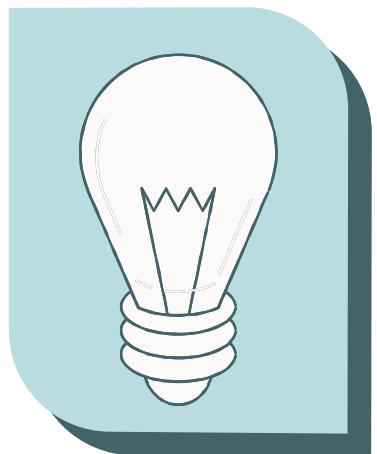
STRUCTURED AI AGENTS

for Reliable Visualization Report Generation



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HIGHLIGHTS

- **Clean & Correct Data**
By performing **case normalization** and data cleaning, we achieved correct and consistent Top-K extraction.
- **Reliable Metrics**
All quantitative results are deterministically computed, **eliminating AI-induced hallucinations**.



METHODOLOGY

1. Structured AI Agent Design

We decompose agent into multiple structured sub-task units:

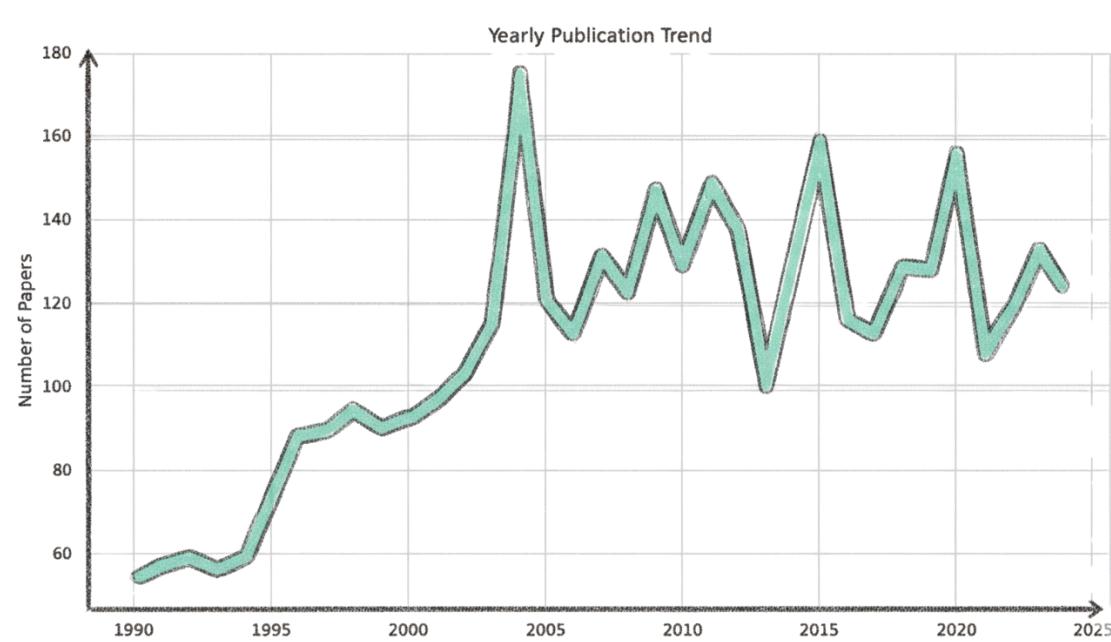
- **Overview**
- **Temporal Trends**
- **Top Entities**
- **Cross-Metric Relationships**

3. Execution & Report Composition

Integrates verified data, charts, and text into a **readable and reliable** visualization report.



RESULTS



Yearly Publication Trend:

All numerical values are deterministically computed, eliminating AI-induced errors.

• Structured Report

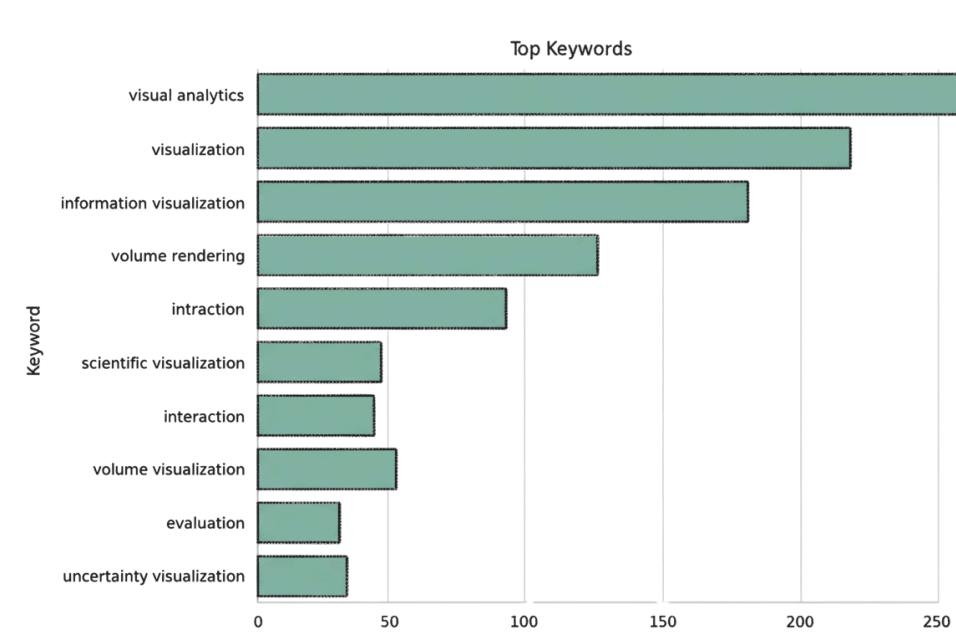
Our report generation pipeline organizes results into **structured sections**, improving readability and consistency.

• Efficient Generation

Our pipeline completes within about **15 seconds**, enabling efficient and responsive visualization generation.

2. Structured LLM Output

```
{  
  "section": "<section>",  
  "title": "<short title>",  
  "goal": "<2-3 sentences>",  
  "description_template":  
    "<1-2 sentences with {placeholders}  
     computed by METRICS>",  
  "narrative_only": <true/false>,  
  "compute_only_code": "  
    <python>",  
  "code": "<python code>"  
}
```



Top Keywords:

Case normalization prevents common counting errors caused by inconsistent capitalization.

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