Wrocław University of Science and Technology

Bridging AI and Law: A Scalable Multi-Agent Platform for Quantitative Legal Analytics

Łukasz Augustyniak[1,2], Kamil Tagowski[1], Adrian Szymczak[1], Jakub Binkowski[1], Albert Sawczyn[1], Denis Janiak[1], Michał Skibiński[1], Mateusz Bystroński[1], Grzegorz Piotrowski[1], Michał Bernaczyk[3], Krzysztof Kamiński[4], Tomasz Kajdanowicz[1]

[1]WUST, [2]AI Solutions, [3]Wrocław University, [4]Court of Appeal, Wrocław

lukasz.augustyniak@pwr.edu.pl

Introduction

AI in law faces a trust gap. **Retrieval-Augmented Generation (RAG)** systems are powerful but limited:

- **Scale:** Cannot aggregating stats across thousands of documents.
- **Trust:** operated as black boxes without full provenance.

We introduce **QLA**, a production platform for **Quantitative Legal Analytics** at scale.

System Architecture

Our 5-stage Multi-Agent Pipeline:

1. **Retrieval:** Hybrid Search (BM25 + Vectors).
2. **Curation:** Lawyer-AI collaborative selection and schema design.
3. **Extraction:** Schema-based (GPT-4o/5, Anthropic Claude, local LLMs, etc.).
4. **Aggregation:** Statistical & Analysis or extracted informations.
5. **Interpretation:** Provenance-tracked results of extraction and aggregation.

Scale & Data

- **3M+** Polish Legal Documents (Judgments, Tax Interpretations).
- **6,000** UK Rulings.
- **300M+** Semantic Vectors (Chunked Indexing).
- **Unified Data Model** for cross-jurisdiction support.

Results vs RAG

Metric	RAG	QLA (Ours)
Scale	10-100 docs	**100-5000+**
Analysis	Qualitative	**Quantitative**
Provenance	Limited	**Full**
Extraction	Unstructured	**Schema-based**

Conclusion

QLA demonstrates that responsible AI in high-stakes legal applications can achieve both **scale** and **transparency**.

Quantitative Legal Agent (QLA) bridges the gap between AI and Law, indexing **3 Million+** documents to enable **verifiable, quantitative legal analytics** through a novel **Lawyer-AI collaborative workflow.**

Scan to visit the platform
https://legal-ai.augustyniak.ai

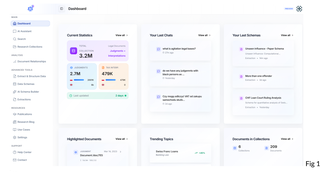

Fig 1. Dashboard with aggregated analytics.

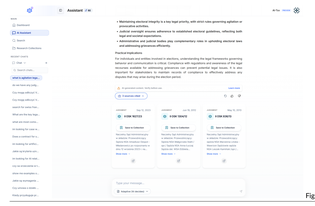

Fig 2. Chat Interface.

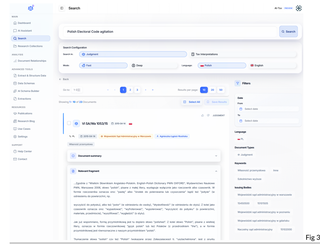

Fig 3. Search Interface.

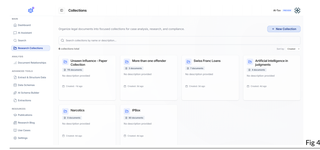

Fig 4. Collections Manager.

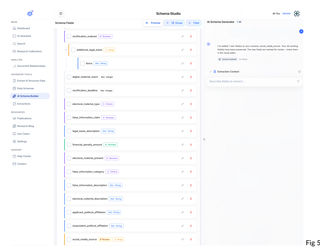

Fig 5. AI Schema Designer for structured extraction.

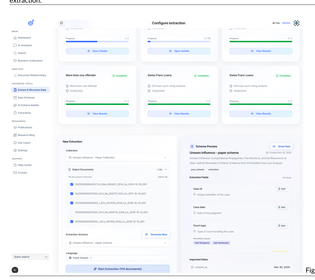

Fig 6. Extraction Jobs.

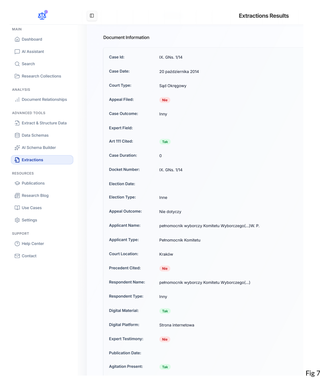

Fig 7. Extraction Results.