Enterprise Language Model for Insurance (ELMI)

AI Powered by the Language of Insurance

The Enterprise Language Model for Insurance (ELMI) provides insurers with the capabilities of generative AI (GenAI) and LLMs safely, securely, cost-effectively and with the domain-specific knowledge that insurance processes require.

Through the expert.ai Platform for Insurance and solutions, ELMI supports key capabilities:

- **Claims Handling:** Utilize zero-shot and few-shot data extraction technologies to enhance accuracy and expedite the claims settlement process.

- **Record Summaries:** Generate concise summaries through advanced record summarization techniques to accelerate faster and more informed decision-making processes.

- **Medical Treatment Compliance:** Detect potential non-compliance and potential fraud through automated checks for medical treatment adherence, safeguarding against fraudulent activities and ensuring regulatory compliance.

- **Natural Language Q&A:** Ask questions in everyday language *"What is the date of the doctor's visit?"* and receive relevant answers *"The patient visited the doctor on February 28, 2024."* extracted from and traceable to the original claim files.

The Power of Hybrid AI

ELMI uses a flexible and adaptable approach, called Hybrid AI, that combines Machine Learning, Rule-based AI, Knowledge Graphs and LLMs. Using Hybrid AI allows insurers to take a best-of approach that is fit for the data, the project, overall cost targets and your goals for Responsible AI that holds up to the latest regulations.

In the pursuit of digital transformation and improved combined operating ratios, through the power of hybrid AI, ELMI delivers accuracy, efficiency and cost effectiveness by:

- Avoiding computational linguist salaries needed for DIY approaches.

- Eliminating expensive compute costs for training and fine tuning models.

- Increasing efficiency and throughput while decreasing risk.

- Optimize operational hosting expenses alongside subscription services.

- Not charging token-based usage fees.

ELMI is Enterprise Grade and Ready to Deploy

Trained for Insurance
Eliminate the cost and complexity of training language models. ELMI is engineered with a deep understanding of the insurance domain, providing insurers with GenAI ready to tackle underwriting, risk and claims processing challenges.

Cost Optimized
Compared to hosted token-based models, ELMI reduces expenses related to usage, hosting, running and maintenance, while delivering superior performance and accuracy.

Highly Accurate and Explainable
ELMI uses a knowledge-based RAG approach for more precise inputs and advanced LLM processing techniques for easier to understand response outputs.

Supports Human-in-the-Loop (HITL)
The Human-in-the-Loop approach balances AI models with human judgment and experience, enhancing process accuracy and expertise and fostering user trust.

Secure and Compliant
Designed to ensure compliance with the most stringent governance standards and does not share sensitive insurance data.

Cloud Agnostic
Deploy on any cloud infrastructure or on-premises.

Reusable Model Across Teams
Access reusable, secure and real-world-tested functionality built for insurance companies but without the cost or complexity involved with training an LLM.

Tunable to Each Insurer
Easily incorporate new data or knowledge over time or fine tune to align with business requirements for a more accurate and cost-effective starting point from which to begin.

About us
Expert.ai is the leading enterprise AI company solving complex language challenges. Our solutions deliver key information for publishers, streamline operations for insurers, drive revelations for pharmaceutical giants, and enhance customer interactions within financial services – all while automating traditional labor-intensive methods. By combining deep domain expertise with the finest attributes of Large Language Models, Machine Learning, and Symbolic AI, we are at the leading edge of linguistic advancements in hybrid AI. With a global presence in Europe and North America, we proudly serve clients that include AXA XL, Zurich Insurance Group, Generali, Sanofi, EBSCO, The Associated Press, Bloomberg INDG, and Dow Jones.

www.expert.ai

ELMI Performance Metrics

For insurers evaluating different LLM-based AI solutions, benchmarks offer a standardized way to compare important performance indicators.

We compared ELMI's performance with those of base LLMs across three key indicators:

1. **Answer Similarity** – closeness of response to predetermined output result.
2. **Truthfulness** – model strength against hallucinations and other possible results not coming from context.
3. **Formal Correctness** – model ability to generate formally correct results for integration in application workflows.

Benchmark Comparison Results

Model	Answer Similarity	Truthfulness	Formal Correctness
ELMI	0.456	**0.781**	**0.934**
GPT-3.5-turbo	0.458	0.710	0.666
GPT-4	**0.466**	0.763	0.824
Llama2-13b	0.439	0.755	0.004
Mistral-7b	0.430	0.724	0.219
Mixtral-8x7b	0.449	0.743	0.241
Zephyr-7b	0.424	0.708	0.239

Performance Highlights

Advanced Accuracy with Reduced Hallucination Risk
ELMI matches the accuracy levels of GPT-3.5-turbo and is on par with GPT-4. It reduces the hallucination risk by ~24.3% compared to GPT-3.5-turbo and by ~7.4% compared to GPT-4, thanks to our instruct-based fine tuning.

Knowledge-Based Precision and Clear Traceability
ELMI employs a Knowledge-Based RAG approach for precise inputs and utilizes advanced LLM processing techniques for easily understandable response outputs. This ensures truthful results and complete traceability to the source material.

Notable Improvement in Formal Correctness Scoring
ELMI shows a large improvement in Formal Correctness scoring, resulting in ease of integration in insurance workflows and, ultimately, cost savings.

Enhanced Speed
Leveraging innovations like Fast Vocabulary Transfer (FVT) and Multi-Word Tokenization (MWT), ELMI showcases a 1.8x increase in speed without compromising quality. These innovations are also being harnessed by Meta (Facebook) for their upcoming LLMs.

Cost-Efficient Operation on Single GPU Machine
ELMI can run on a single GPU machine. This not only translates to substantial cost savings compared to typical LLMs but ensures optimal performance for processing significant volumes of documents.