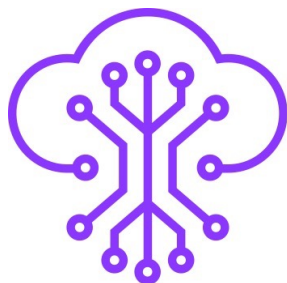# UNLOCKING THE POWER OF AI IN INSURANCE

How large language models (LLMs) are changing the game for the insurance sector

Roots Automation

Artificial Intelligence (AI) has been a hot topic for the past 10+ years, enabled by constantly increasing adoption of cloud technologies and modern approaches to data management. Applications of AI range from voice-controlled chat agents, such as Alexa, to more complex ecosystems which can be found in autonomous vehicles.

Most recently - thanks to the successful launch of OpenAI's ChatGPT - Large Language Models have been thrust into the spotlight. While their capability to revolutionize human-AI interactions is significant, it's crucial to grasp their limitations and drawbacks, especially in the context of the insurance industry.

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Co-founder & CTO

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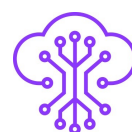
WHAT IS A LARGE LANGUAGE MODEL?

A Large Language Model (LLM) is an advanced algorithm that uses AI to read, analyze, organize, predict or generate text based on a deep corpus of written knowledge. In its current state, ChatGPT, for example, understands and can generate natural language responses based on its training on books, Wikipedia articles, websites, code, and literature from across the web.

LLMs like ChatGPT are able to provide responses to user inquiries on a broad range of topics, albeit with varying degree of accuracy or depth. Answers may come in the form of a concise one-word retort, or a multi-page stream of text. However, current LLMs come with some drawbacks:

1. Fact vs Fiction

Tools like ChatGPT will build a response from various sources, often taking sentences / words out of context and provide this information back to the user as facts. OpenAI has acknowledged this challenge, advising that this issue poses a real threat for LLM users unable to differentiate fact from fiction, particularly in areas like insurance where specificity and context are vital for settlements

2. 2021 called and want their LLM back…

Further, LLMs are currently 'stuck' in the time frame they were trained. If you asked ChatGPT for a summary of the latest insurance rates for New York, you won't get anything back – or worse, you will be presented with rates from 2021. Because of their size and complexity, today's LLMs are not reviewing their sources on a regular basis and so obtaining up-to-date information may limit some aspects of commercial use.

3. What color would you like your settlement?

Finally, LLMs are currently probabilistic and generative – meaning, if the exact same question was asked 10 times, the answer may very well change each time. The lack of controllability of inputs and outputs poses a significant challenge for companies operating in highly regulated or protocol-driven environments in which predictability of outcome is crucial for compliance, or simply repeatability.

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THE INSURANCE SECTOR NEEDS AN INSURANCE LLM

While there are some clear limitations and challenges of LLMs, the insurance industry has enormous potential for using this technology, including in areas such as:

Customer Service - Areas like customer servicing and inquiries could offer quick and concise responses which drastically improve customer experience, reduce waiting times, and provide accurate information. Moreover, using LLMs can significantly reduce operational costs while increasing efficiency and productivity.

Fraud Detection – LLMs could assist in fraud detection and prevention. Insurance companies can use ChatGPT models to detect and prevent fraud in real-time, saving both time and money. The technology can be used to identify patterns, detect anomalies, and flag suspicious behavior, allowing companies to take appropriate action quickly.

Document Analysis - LLMs could assist underwriters to assess complex risks like pollution coverage, where site assessment reports are long, complicated, and nuanced. Historically insurance companies have relied on highly skilled (and expensive) underwriting talent to review these reports for important minutiae that often gets missed when manual review is the only option. An LLM can ensure that everything gets reviewed.

In essence, LLMs offer significant potential for insurance organizations to utilize AI across written documents and data sources – but not in their current state, and most likely not in their next update – at least without some help.

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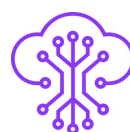Automation
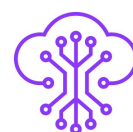
UNLOCKING LLMs TRUE POTENTIAL IN INSURANCE

Solutions like ChatGPT deliver direct responses without overwhelming users with irrelevant information or ads. This is a refreshing user experience and removes the complexity of searching, finding, and validating information manually.

And while technical users can access some of the limited controls behind these LLMs for a fee, it is important to acknowledge that there are also drawbacks to these controls.

First, fine-tuning remains the realm of expert, technical users – in which not all companies have the expertise to do, and if they do the issue around ongoing management and maintenance remains. Factoring the inability to fine tune using more than a single carrier's experience will severely limit performance of the model even with the talent and infrastructure to manage it.

Additionally, the average insurance company collects vast amounts of sensitive data, including personal information, medical records, and financial information. This information needs to be protected at all costs and sharing data between organizations via third-party tools like ChatGPT is simply out of the question.

Lastly, to overcome the data privacy challenge, bringing a sophisticated LLM into your own cloud environment requires high computing resources, incurring significant costs just to host the model, in addition to the burden of additional storage for the data it is consuming.

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IN SUMMARY

LLMs are a game changer for the insurance industry and hold huge potential to not only analyze written documents and information at scale, but also provide the fuel for automating more complex, unstructured, natural language oriented business processes.

We advise leaders to exercise caution and take a test-and-learn approach. Watch out for confident-sounding versus confidently correct answers. And leverage middleware (a cockpit) that provides the ability to fine-tune these models to better control inputs and outputs, ensuring predictability and repeatability within the context of your organization.

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Find out more about unlocking the power of AI in your organization