

Title

From Language to Risk: Leveraging LLMs for Enhanced Risk Factor Scenario Generation

Speaker/Company

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Abstract

Generative AI is a field within artificial intelligence that focuses on creating models and systems capable of generating new and original content. This includes generating images, texts, music, and even videos that are hardly distinguishable from human-generated content.

But why has generative AI gained so much importance in recent years? Groundbreaking advances in neural networks and deep learning have elevated the capabilities of generative models to a completely new level. From the entertainment industry to design and marketing, generative AI has proven to be a game changer in numerous sectors. However, even in the insurance world, in areas such as data cleansing and enrichment, scenario generation, or process optimization, models of artificial intelligence are now demonstrating enormous potential. They can contribute to improving, accelerating, and making decision-making processes more robust by learning complex dependency structures or generating diverse scenarios and solutions.

In this presentation, we will begin with a brief insight into the theoretical background of the underlying models, such as Large Language Models (LLMs) and Generative Adversarial Networks (GANs). It is fascinating that fundamental building blocks of modern LLM architectures can be adapted so that they can be used in a modified version to generate time series of market risk factors. Through a case study, we will investigate how these models can be used for the annualization of risk factor distributions, thereby demonstrating concrete applications in the context of quantitative risk management, for example, in the framework of Solvency II.

Biography

Tom Huber:

Tom is a senior consultant at Oliver Wyman Actuarial Services, where he specializes in quantitative risk management, particularly in the context of Solvency II. He holds a Master of Science (M.Sc.) in Business Mathematics from Ulm University, where he focused on Actuarial Science and Data Analytics. Tom is passionate about leveraging advanced analytical techniques and generative AI to enhance risk management practices and improve decision-making processes for his clients.

Amelie Morgenstern:

Amelie is a Senior Consultant at Oliver Wyman Actuarial Services, specializing in cash flow modeling within the frameworks of local GAAP and Solvency II. Amelie holds a Master's degree

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in Mathematical Finance and Actuarial Science from the Technical University of Munich (TUM) and she is a recognized member of the DAV. Fascinated by the power of AI, she is dedicated to exploring how to leverage its advantages in the insurance industry.
