



ComPSE Consulting
DECISIONS UNDER UNCERTAINTY

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Service profile

Strategic Advisory on Generative AI for Engineering Workflows

The Challenge: Navigating the Hype of Generative AI in Engineering

Leaders in the pharma and biotech engineering sectors are under pressure to leverage new AI technologies. However, it is difficult to distinguish genuine, high-impact opportunities from speculative hype. Adopting unproven AI tools into critical, regulated workflows like process design and HAZOP analysis carries significant risk without expert, independent evaluation.

Our Solution: Expert Guidance to Harness AI's True Potential

ComPSE Consulting provides expert scientific advisory to help you evaluate, pilot, and strategically integrate emerging AI technologies. We act as your partner to cut through the noise, identify feasible, high-impact use cases, and develop a clear roadmap for adoption that prioritizes safety, productivity, and return on investment.

Our goal is to help you dismiss the hype and retain the real substance of what generative AI can offer your engineering workflows.

Our Approach: Bridging Research and Practical Application

Our advisory service is grounded in active, cutting-edge research into the safe and effective use of AI in engineering.

- **Evidence-Based Evaluation:** As the coordinator of the **PROSAFE (AI Safety) project** and through ongoing PhD-level research, we are actively developing and testing frameworks for using Large Language Models (LLMs) in safety-critical applications.
- **Structured Advisory:** We advise on LLM selection and integration, focusing on how to ensure credibility, feasibility/verifiability, and productivity, leveraging insights from our research. We help you design and assess proof-of-concept projects to generate internal data on a technology's true value.
- **Team Upskilling:** We provide targeted training to upskill your teams, equipping them with the knowledge to use emerging AI tools safely and effectively for tasks like process design, safety analysis (e.g., HAZOP), and documentation.

Potential Application Areas for Evaluation

We can provide expert advisory to help you assess the impact of Generative AI in areas such as:

- **Process Safety & HAZOP:** Evaluating how LLMs can assist in identifying hazards, structuring safety reviews, and improving the quality and consistency of safety documentation.
- **Conceptual Design & Documentation:** Assessing AI tools for accelerating early-stage process design, generating reports, and creating standardized documentation workflows to improve efficiency.
- **R&D and Innovation Workflows:** Reviewing and optimizing R&D plans by incorporating state-of-the-art AI, ensuring your innovation pipeline remains competitive.

About Prof. Gürkan Sin

As a Professor at DTU and coordinator of the **PROSAFE (AI Safety) project**, Prof. Gürkan Sin is at the forefront of research into the safe and effective application of AI in engineering. With over 30 years of experience and a global network, he provides a credible, independent perspective to help organizations navigate technological change.

Next Step: A Focused Scoping Workshop

Let's begin with a confidential, no-obligation workshop to discuss your strategic priorities and identify one or two high-potential AI use cases for a structured evaluation.