



The Generative Intelligence Lab

TALK

Generative Intelligence in Academic Projects

<http://generativeintelligencelab.ai>

Description

This **talk (1–2 hours)** introduces core concepts, capabilities, and practical applications of Generative Intelligence in scientific research, with a special focus on multi-disciplinary projects. The session is designed for a non-technical audience and aims to promote an understanding of Generative AI as an enabler for new forms of interaction, collaboration, and creativity in research. The discussion revolves around the following questions:

- ❖ What is Generative Intelligence, and how does it differ from traditional AI approaches?
- ❖ How can GenAI support scientific research across disciplines, particularly for non-technical users?
- ❖ How can Generative AI assist in analyzing and interpreting unstructured data such as text, images, or video?
- ❖ How can scientists begin exploring and applying GenAI tools effectively in their own work?

Target audience:

This tutorial is intended for faculty, researchers, and students from non-technical backgrounds who are interested in exploring the role of Generative Intelligence in scientific research. No prior experience with AI or programming is required.

Proposed Structure

Understanding Generative Intelligence

- What Generative AI is and why it matters in research
- Basic concepts behind large generative models
- What are generative Intelligence Systems
- How these models understand and generate language
- How to interact with them through simple inputs and task

How to Think About GenAI in Research Applications

- What Generative AI can and cannot do in research settings
- Using GenAI to analyze unstructured datasets
- Creating interactive interfaces such as research chatbots or assistants
- Supporting idea generation, summarization, exploration, and rapid prototyping
- Integrating GenAI into research workflows without needing technical skills

How to Interact with Generative Intelligence

- Basic view of Prompt Engineering
- Learn how to write clear and simple instructions to get useful, relevant results
- Explore easy techniques to improve your questions or tasks for better outcomes
- Common mistakes people make when using GenAI and how to avoid them

How Agentic AI works

- Why the 'hype' around Agentic AI
- Introduction to agentic AI systems and how they differ from simple tools
- Examples of AI agents that support research planning, analysis, or engagement
- How AI assistants can learn goals, manage tasks, and adapt

Collective Intelligence

- Understanding the power of collaborative interfaces
- Communication, coordination, and creativity in human–AI teams
- Use cases for co-creative AI in business innovation

About the Instructor

Dr. Fernando Koch is a Research Professor at Florida Atlantic University, where he leads the Generative Intelligence Lab. His work focuses on Artificial Intelligence, Generative AI, and intelligent systems, with over three decades of experience spanning research, innovation, and applied system design. He earned his Ph.D. in Computer Science from Utrecht University and has previously held research and leadership roles at IBM Research, Samsung Research, and Openwave, as well as academic appointments at the University of Melbourne and Korea University. Dr. Koch has co-edited several books,

published extensively in AI and distributed systems, and contributed to numerous patents in intelligent technologies. (<http://www.fernandokoch.me>)