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STATE OF THE ART: AI: Where Are We and Where Are We Going

Wednesday 23 July 2025 16:30 (30 minutes)

This talk explores the core principles and practical applications of AI. We begin by defining AI as the discipline that imbues machines with human-like intelligence, encompassing reasoning, learning, and creativity. Key characteristics include the ability to perceive, interact, solve problems, act autonomously, and adapt to environments. We will cover the diverse problems AI addresses, such as classification, regression, prediction, clustering, optimization, and Natural Language Processing (NLP), alongside content generation. The presentation traces AI's evolution from symbolic AI to Machine Learning, Deep Learning, and the transformative rise of Generative AI. We will delve into Large Language Models (LLMs) like GPT and GEMINI and the current technologies based on Agentic AI. The global impact of AI is undeniable, with its interdisciplinary nature driving widespread applications across various sectors, significantly improving efficiency and enabling new capabilities worldwide. The presentation will finish analysing the profound influence of this technology on education and research. AI's intrinsic capabilities in learning, reasoning, communication, and creativity are directly applicable, assisting with academic text analysis, content creation, and report generation. In this scenario AI is becoming an indispensable assistant for students, reasearchers and educators alike, with autonomous AI Agents poised to further revolutionize these fields.

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