

The Seminars on “Information Technology Outlook” - PhD Program in Computer Science and Mathematics

**Annalisa Occhipinti, Ph.D.**

Full Professor of Applied AI

Teesside University, Middlesbrough, UK

Monday July 27, 2026 @ 11:00



Room Gödel – 2nd floor

Dept. of Computer Science

Why Deep Learning Is Not Enough (and What Comes Next)

Despite continuous advances in deep learning, most AI systems remain limited to pattern recognition, with little ability to capture underlying mechanisms or provide interpretable reasoning, creating major challenges in domains involving complex, structured, and heterogeneous data. In this talk, Professor Occhipinti will present her research on the integration of multimodal data (including spatial omics and imaging datasets) with mechanistically informed AI models. This framework bridges data-driven learning with structured, mechanistic modelling, allowing interpretable predictions of system states and the identification of functional signatures. Using breast cancer as a case study, she will demonstrate how these AI strategies can infer latent system states and uncover the regulatory principles governing complex biological systems.

Annalisa Occhipinti is a Professor of Applied AI at Teesside University. She holds a PhD in Computer Science from the University of Cambridge, awarded in 2016. Annalisa works at the intersection between Computer Science and Biology to develop AI methodologies for cancer applications. Her current research topics include deep learning applications for multi-modal data integration, mathematical and computational modelling of cancer, and spatial omics. Annalisa has recently received several awards for her contributions in the field of AI and cancer research, including an award from the University of Cambridge for her research work in breast cancer. Her research is also supported by multiple national and international funding agencies on the application of AI to diverse challenges in the biological sciences. Annalisa also has experience in Big Data, Business Intelligence and AI applications for biotechnology. She is currently involved in multiple projects with industrial partners to apply AI techniques for gaining valuable operational insights from different data sources.

<https://research.tees.ac.uk/en/persons/annalisa-occhipinti><https://sites.google.com/view/annalisa-occhipinti>