Artificial Intelligence and Creativity

Summer School Programme

7-13 July 2024, 9:00 to 18:15

	Monday	Tuesday	Wednesday	Thursday	Friday
9:00-10:45	M.T.Keane	E.Treppoz	P. Gervas Gomez-Navarro	Doctoral workshop	L.Parisi
10:45-11:15	Coffee Break	Coffee Break	Coffee Break	Coffee Break	Coffee Break
11:15-13:00	T.Veale	T.Veale	Y.Toma	L.Parisi	Doctoral workshop
13:00-14:15	Lunch	Lunch	Lunch	Lunch	Lunch
14:15-16:00	E.Treppoz	M.T.Keane	Excursion	C.Zolynski & Camille Salinesi	L.Parisi
16:00-16:30	Coffee Break	Coffee Break	Excursion	Coffee Beak	Coffee Break
16:30-18:15	P. Gervas Gomez-Navarro	Y.Toma	Excustion	C.Zolynski & Camille Salinesi	L.Parisi

Mark T. Keane, University College Dublin
Creativity, Surprise & the Roots of Explanation

In these lectures, I consider early computational work on creativity that attempted to capture how people generate new knowledge from old experiences (specifically, the use of analogy and conceptual combination) and try to connect it to recent claims in generative AI about related abilities. Then, drawing on recent work done on surprise in humans and their understanding of the unexpected, I argue that the need to explain the world, to make sense of things, and to account for the unexpected/anomalous are key drivers for intelligent entities. I then take these understandings and attempt to apply them to current developments in eXplainable (XA), to assess the gap between current strategies for explainability and what a truly intelligent entity might require.

Tony Veale, University College Dublin
Educated Insolence: Building AIs with a Sense of Humour

For much of its history, AI was a scientific discipline defined more by its portrayal in science fiction than by its actual technical achievements. Real AI systems, built upon very Large Language Models (LLMs), are now catching up to their fictional counterparts and are as likely to be seen in news headlines as on the big screen. Yet as AI outperforms people on tasks that were once considered yardsticks of human intelligence, one area of human experience still holds out, for now at least: our very human sense of humour. This is not for want of trying, as this course will show. The true nature of humour has intrigued scholars for millennia, but AI researchers can go one step further than philosophers, linguists and psychologists ever could. By building computer systems with a sense of humour, capable of appreciating the jokes of human users or even of generating jokes of their own, we can turn academic theories into practical realities that amuse, explain, provoke, and delight. Topics to be covered by the course include: theories of humour; early symbolic models; joke analysis (e.g., of Reddit joke sets); recent developments in the field, as informed by LLMs; practical uses of computational humour in AI; moral dimensions and dilemmas; irony, sarcasm and sentiment; and the capacity (and otherwise) of LLMs to be truly and creatively humorous. In particular, we will explore the three basic approaches to imbuing LLM-based systems with a good sense of humour (GSOH): prompt engineering; fine-tuning; and retrieval-augmented generation (RAG).

Pablo Gervas Gomez-Navarro, Universidad Complutense de Madrid
Fundamentals of Generative AI for Literary Artifacts

The recent advances in neural artificial intelligence have made it possible for texts generated by computer programs to challenge those generated by humans in many fields. This ultimately led to specific considerations in the recent agreement between scriptwriters and the Hollywood industry as to what may be considered acceptable use of AI in the creative industries. This situation comes about as a result of a sequence of chained developments in neural computing that result in the astonishing programs that power solutions like ChatGPT. The proposed course outlines the basic concepts and insights that underlie these developments: neural networks, word embeddings, attention mechanism, transformers, large language models. It will also consider the potential impact of these developments in the various aspects of our society that might be affected, with particular focus on education and the creative industries.

Edouard Treppoz
Generative AI and Copyright Law : what should be the fair balance?

The course will be dedicated to the interaction of gen ai and copyright law. The goal is to determine under eu law to what extent copyright law may apply to the input process and the output process and whether copyright owners may license their content. From a legal point of view, the course will focused on the economic side of the debate, especially in order to determine whether a levy should compensate the TDM exception.

Yann Toma
Metapolitics of AI : From reception to transformation.

The relationship between Art and AI leads us to evoke the notion of transformation, of extension via the creation process assisted by AI, of crossing a ford encompassing for the first time in an abstract way (between creativity and creation) the totality of the differences of the world, whereas previously the universal tried to abstract until it promptly experienced the data which dictate its behavior. We will see how Art can more than ever aim to "increase imaginations" in the sense in which the philosopher Edouard Glissant considered it, that is to say between individual imagination and collective imagination (world-imaginary, from excess to excess). In a post-covid context, where the company has definitively taken precedence over the nation state, and at a key moment in the history of humanity where art questions its fascination with machines and technology (Emotional AI/ Procedural Content Generation/ Representation Learning/ Style Transfer), we will question the notion of metaphysical experience of AI through art.

Celia Zolynski, Camille Salinesi, Université Paris 1 Panthéon-Sorbonne
Deep fake and creation

The democratization of deep fake technologies, in particular due to the rise of generative AI systems, has led to a proliferation of uses for these technologies in different contexts (artistic, entertainment, media and even legal). These uses can be respectful of the legal framework and ethical values, or pursue criminal ends or democratic destabilization. This lecture will offer an analysis of the technologies implemented and the applicable legal framework (including the EU AI Act), both in terms of the generated deepfake and in terms of the existing technologies for detecting them or limiting their deleterious effects.

Loreto Parisi, Musixmatch srl

Advancing Podcast Discovery and Engagement through LLMs, RAG, and Chatbots

This seminar dives into how Large Language Models (LLMs) are revolutionizing podcast discovery and engagement. We will explore how AI techniques are reshaping search algorithms, enhancing content personalization, accessibility and boosting user interaction on podcast platforms, an example of such is the innovative ColBERT retrieval model, engineered for quick and efficient Retrieval-Augmented Generation (RAG) across large text collections in tens of milliseconds.

By integrating theoretical frameworks with empirical studies, this session aims to elucidate the implications of these technologies for the future of content discovery, offering insights into their potential to transform listener experiences and content accessibility.