CREAI 2022 - Preface to the First Workshop on Artificial Intelligence and Creativity

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Abstract

In recent years, Artificial Intelligence (AI) has gained increasing popularity in the area of art creation, by demonstrating its great potential. Research in this topic has developed AI systems able to generate creative outputs in fields such as music, painting, games, design and scientific discovery, either autonomously or in collaboration with humans. Therefore, AI also helped to analyze and study the mechanisms of creativity from a broader perspective: from the socio-anthropological to psychological, as well as cognitive impact of the autonomous creative processes of artificial intelligence. These advances are leading to new opportunities research perspectives, while also posing challenging questions related to authorship, integrity, bias and evaluation of AI artistic outputs. CREAI, the workshop on AI and creativity, tries to address these research lines and aims to provide a forum for the AI community to discuss problems, challenges and innovative approaches in the various sub-fields of AI and creativity.

1. Background and Motivations

Artificial Intelligence has become widespread in a large array of different domains: in the area of art creation, AI has gained increasing popularity by demonstrating its great potential. Recently, AI showed a certain degree of creativity in painting, composition, writing and design, but it also helped to analyze and study the mechanisms of creativity from a broader perspective to better understand the impact of the autonomous creative processes of artificial intelligence. These advances are leading to new opportunities research perspectives, while also posing challenging questions related to aspects such as authorship, integrity, bias and evaluation of AI artistic outputs.

This workshop aims to collect and bridge the gap between different technologies and most recent advances in the area of creative AI in terms of the enabling creation, analysis and understanding technologies. CREAI aims to analyze the relationships between AI and artistic creativity from a broad perspective.

Topics of interests include but are not limited to:

- AI role in understanding human creative processes
- AI systems able to either assist or produce artistic outputs
- Cognitive intelligence and learning for music composing, performing and matching
- Design of AI systems for human creativity through collaboration and co-creation
- AI and cognitive aspects in human-robot interaction
- Resources such as ontologies, knowledge graphs, textual corpora, annotated audio, video, or other content, about creative products (e.g. music, poetry, etc.)
- Music classification and music similarity
- Cultural creative ecosystems and social creativity involving AI systems
- Evaluation methodologies of AI artistic outputs, and creativity in AI systems
- Cultural, social and educational impacts of AI on creativity
- Ethical issues raised by creative AI systems (authorship, integrity, bias...)
- Neuroscience, cognitive science and psychology for AI on creativity

2. Accepted Papers

The program provides a good overview among the different topics related to the area of AI and creativity. Moreover, the program will be further enriched through a keynote given by François Pachet, the Director of the Spotify Creator Technology Research Lab. The title of the keynote will be "AI-Assisted Music Creation: is the problem solved?".

The accepted papers range from the evaluation and implementation of methodologies of AI artistic outputs, to cultural, social and educational impacts of AI on creativity, and also to ethical issues raised by creative AI systems.

In total, 8 contributions were accepted at CREAI 2022 (all included in the proceedings):

1. Dario Pasquali, Francesco Rea and Alessandra Sciutti - *Detecting Lies in the Wild: Creativity and Learning @ the Maker Faire Rome*
2. Nicolas Lazzari, Andrea Poltronieri and Valentina Presutti - *Pitchclass2vec: Symbolic Music Structure Segmentation with Chord Embeddings*
3. Andrea Roli - *Robots, cells and baroque music: Creativity as an emergent phenomenon*
4. Luca Befera and Livio Bioglio - *Classifying Contemporary AI Applications in Intermedia Theatre: Overview and Analysis of Some Cases*
5. Ken Déguernel, Bob L. T. Sturm, Hugo Maruri-Aguilar - *Investigating the relationship between liking and belief in AI authorship in the context of Irish traditional music*
6. Mattia Barbaresi and Andrea Roli - *Machine improvisation through generalized transition probability graphs*
7. Maria Mannone, Valeria Seidita and Antonio Chella - *Does Creativity Help Us Survive? A Possible Approach with Quantum-Driven Robots*
8. Luca Giuliani, Allegra De Filippo, Andrea Borghesi, Paola Mello and Michela Milano - *A Multi-modal Perspective for the Artistic Evaluation of Robotic Dance Performances*

3. Program Committee

As a final remark, the program co-chairs would like to thank all the members of the Program Committee (listed below), as well as the organizers of the AIxIA 2022 Conference[1].

- Mattia Barbaresi, *University of Bologna*
- Pierpaolo Basile, *University of Bari*
- Andrea Borghesi, *University of Bologna*
- Roberta Calegari, *University of Bologna*
- Filippo Carnovalini, *University of Padova*
- Matteo Casari, *University of Bologna*
- Luca Casini, *University of Bologna*
- Federica Cena, *University of Torino*
- Antonio Chella, *University of Palermo*
- Giovanni Emanuele Corazza, *University of Bologna*
- Marco de Gemmis, *University of Bari*
- Aldo Gangemi, *University of Bologna*
- Antonio Lieto, *University of Torino*
- Francesca Alessandra Lisi, *University of Bari*
- Paola Mello, *University of Bologna*
- Mirco Musolesi, *University of Bologna*
- Cataldo Musto, *University of Bari*
- Antonio Roda, *University of Padova*
- Andrea Roli, *University of Bologna*
- Silvia Rossi, *University of Napoli*
- Antonio Sgorbissa, *University of Genova*
- Alessia Tessari, *University of Bologna*
- Gennaro Vessio, *University of Bari*

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[1]https://aixia2022.uniud.it//