CREAI 2023 - Preface to the Second 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 two keynotes given by: (1) Marko Tkalcic, professor at the Faculty of Mathematics, Natural Sciences and Information Technologies (FAMNIT) at the University of Primorska in Koper, Slovenia; and (2) Giuseppe Folonari, partner at Onde Alte (Social Impact Lab). The title of the keynotes will be respectively "Towards Computational Psychology for Creativity" and "Our perspective on AI, Creativity, Innovation & Social Impact".

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, 6 contributions were accepted at CREAI 2023 (all included in the proceedings):

1. Francesco Alfieri, Luigi Asprino, Nicolas Lazzari and Valentina Presutti - *Creative influence prediction using graph theory*
2. Lorenzo Stacchio, Claudia Scorolli and Gustavo Marfia - *Evaluating Human Aesthetic and Emotional Aspects of 3D generated content through eXtended Reality*
3. Tommaso Bianco, Giovanna Castellano, Raffaele Scaringi and Gennaro Vessio - *Identifying AI-Generated Art with Deep Learning*
4. Chiara Lucifora, Claudia Scorolli and Aldo Gangemi - *CREON: a Creative Ontology based on Psychological and Neuroscientific Studies*
5. Emanuele Cosenza, Andrea Valenti and Davide Bacciu - *Graph-based Polyphonic Multitrack Music Generation*
6. Luca Giuliani, Allegra De Filippo and Andrea Borghesi - *Towards Intelligent Music Production: A Sample-based Approach*

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 2023 Conference[1].

- Fabrizio Balducci, *University of Bari*
- Mattia Barbaresi, *University of Bologna*
- Pierpaolo Basile, *University of Bari*
- Andrea Borghesi, *University of Bologna*
- Roberta Calegari, *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*
- Luca Giuliani, *University of Bologna*
- Antonio Lieto, *University of Torino*
- 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*
- Fabio Tamburini, *University of Bologna*
- Gennaro Vessio, *University of Bari*

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[1]http://www.aixia2023.cnr.it/