
Conference Report: Eighth International Conference on Computational Creativity

Christian Guckelsberger (Goldsmiths, c.guckelsberger@gold.ac.uk)

Introduction

From 19th to 23rd June 2017, around 150 researchers met for the Eighth International Conference on Computational Creativity (ICCC'17) at Georgia Tech in Atlanta, USA. *Computational Creativity* is the “philosophy, science and engineering of computational systems which, by taking on particular responsibilities, exhibit behaviours that unbiased observers would deem to be creative” [3]. The field has a long history [2], and is thriving: since the first dedicated workshop in 2004 and the first conference in 2010, more people come together every year to present their research to an open-minded and interdisciplinary audience. The conference stream is permanently available on YouTube. I am grateful for a generous travel grant from the AISB to participate in this thought-provoking event.

Workshops and Tutorials

After ICCC'15 in Park City and ICCC'16 in Paris, the *Computational Creativity and Games Workshop* (CCGW) came back to the conference for the third time, investigating digital games as an ideal application area for the study of Computational Creativity [7]. It was held together with the *Co-Creation Workshop* (CCW), exploring how artificial agents might collaborate with humans in the creative process. The joint workshop turned out to be very popular; the presen-

ted papers did fit well into both domains, and sparked valuable discussions. The Co-Creativity Workshop ended with a community meeting to devise a manifesto and plan future gatherings. The *Workshop on Musical Metacreation* (MUME) brought together artists and researchers for the fifth time, with a shared interest in developing systems that autonomously or interactively recognize, learn, represent, compose, complete, accompany, or interpret music. In this time of strong political turmoil, the conference benefitted from the *First Workshop on Computational Creativity & Social Justice* (CCSJ). The attendees investigated how Computational Creativity as a community and research field can advance social justice. This potential was showcased, amongst others, by work on procedural narrative and gameplay to address controversial topics.

The workshops were complemented by two tutorials. Pablo Gervás and Carlos León (University of Madrid) engaged the participants of their *Literary Creativity and Narrative Generation* tutorial in hands-on, physical exercises on the construction of narratives and literary artefacts. The attendees were introduced to the most common technical approaches to story generation, along with representative examples. Tony Veale (UC Dublin) organised a tutorial on Twitterbots with the catchy title *Tweet Dreams Are*

Made Of This. Twitterbots are particularly well suited for giving the complex engineering and evaluation ideas in the field tangible form. Participants were given code and knowledge bases to build their own Twitterbots. Less experienced coders were offered to contribute ideas and suggestions to Tony, who conducted a live coding session.

For the first time at the conference, a one-day *Doctoral Consortium* was organised for PhD students to present their work, to receive feedback from fellow students and to network with academics. The consortium closed with a panel of experienced researchers, discussing questions on how to conduct computational creativity research, and advising the students on the next steps towards their PhDs.

Main Conference: From Unicorns and Déjà-Vus

The main conference track was separated into thematic sessions on foundations, language, combinatorial creativity, music, co-creativity and philosophical & psychological perspectives.

The best paper awards reflect the widespread interests and openness of the community: Facing the challenge of developing a course on Computational Creativity, Margareta Ackerman teamed up with experts in the field to devise strategies for *Teaching Computational Creativity* [1]. In *Déjà Vu All Over Again: On the Creative Value of Familiar Elements in the Telling of Original Tales* [9], Tony Veale evaluates the use of familiar characters in machine-crafted story generation. He shows how pre-existing audience ex-

pectations can be exploited to create a *mise en scène*, comic ends or to establish a certain mood to increase overall enjoyment. In *Aspects of Self-Awareness: An Anatomy of Metacreative Systems* [8], Simo Linkola et al. argue why metacreativity, the “capability to reflect on one’s own creative processes and to adjust them” [8], is required for a system to evolve artefacts outside the control of its designer. By not only devising a model of metacreativity but also illustrating how it can be translated into different system architectures, they made a highly relevant contribution to the community.

A honorary mention goes to Ahmed Khalifa, Gabriella Barros and Julian Togelius for their unusual and entertaining work on *DeepTingle* [6], an artificial neural network to generate fantastic gay erotica à la Charles Tingle, and for employing the unicorn biker Kirk to present it. This was only out-matched by the audience’s fabulous performance of a “Happy Birthday” to make João Cunha, presenting a great talk on visual conceptual blending [4], feel very welcome on his birthday.

The keynotes covered both theoretical and practical aspects of Computational Creativity research. Milena Z. Fisher, co-founder of the website *The Creativity Post* and Friedrich Nietzsche scholar, appealed to the community to extend their interdisciplinary work further. Criticising the social sciences in particular, she stressed that the broader field of creativity studies requires stronger theoretical and methodological foundations which can only be established by taking different vantage points and using a wide array of

tools. Gil Weinberg, founding director of the Georgia Tech Center for Music Technology, complemented this keynote with field studies on robotic musicians. He covered a wide range of projects exploiting physical embodiment in cognition, ranging from jazz improvising robots to a prosthetic arm for amputees that restores and enhances human drumming abilities. By reflecting on public concerns about his work, he addressed some of the most important issues in the public perception of Computational Creativity in general.

The poster session was kicked off by a series of five minute presentations. For the first time, conference attendees were also invited to present posters independently of a proceedings publication. The number of posters consequently doubled, and researchers were given the chance to also showcase work which was still in progress or destined for another conference, supporting interdisciplinarity.

The important bits usually happen between the talks, and the community and local chairs ensured that there is plenty of opportunity to mingle. The *Musical Metacreation* research group has teamed up with the *Chamber Cartel* ensemble for a concert at *The Mammal Gallery*. Works include compositions composed by deep learning algorithms, networks of “musebots” that jam together and communicate, compositions inspired by biomimicry and live improvisations with semi-autonomous systems. The conference dinner was held at the *Center for Puppetry Arts*, featuring Jim Henson’s famous puppets from *Sesame Street*, *Labyrinth*, and others.

What, How, Why?

Some questions are so fundamental to the field that they recur every year. We’ve been asking *what* artefacts can be produced with artificial systems, pointing at the wide range of creative products from culinary recipes over dance movements to poetry. We also ask *how* these artefacts come about, illuminating the creative process. In our contribution for this year’s ICC [5], we address a question which has not been investigated rigorously enough yet, but which is of no less importance: We ask *why* an artificial system is being creative. We find that no existing computational creativity system can answer this question about its *intentionality* without ultimately and exclusively referring to the values and goals of their designer and other people. This represents a threat to the field, as an unsatisfying answer to the “why?” might make some people not regard a system as creative. We adopt the existing framework of *enactive artificial intelligence*, which equips us with the necessary conditions for a value function to reflect a system’s own goals. We extend the framework with an account of creativity, describe candidate principles for truly intrinsic value functions, and thus lay the foundations for a minimal, non-anthropocentric model of intentional creative agency. We discuss implications for the design and evaluation of creative systems, and hypothesise why human-level intentional creative agency is so hard to model. While being provocative, my talk was generally well received by an audience which enjoys debating these fundamental questions.

Future Sites and a Journal

We reconvened at the end of the conference for some exciting announcements: The community will come together again for ICCC'18 at the ancient *University of Salamanca*, Spain, followed by ICCC'19 at the *University of North Carolina at Charlotte*, US. The *Association for Computational Creativity* (ACC) will furthermore become a legal body. Besides organising ICCC and promoting Computational Creativity, the governing body will in the future also act as the publisher for the long-awaited *Computational Creativity Journal*. Work on the open-access journal is underway, with the goal to cover important contributions to the field from 2019 onwards.

Acknowledgements Many thanks to the community for providing feedback on an earlier draft of this report. Thanks to the maintainers of the conference, workshop and tutorial websites for providing valuable information.

References

- [1] M. Ackerman, A. Goel, C. G. Johnson, A. Jordanous, C. León, R. Pérez y Pérez, H. Toivonen, and D. Ventura, 'Teaching Computational Creativity', in *Proc. 8th Int. Conf. Computational Creativity*, (2017).
- [2] M. A. Boden, 'Foreword', in *Computational Creativity Research: Towards Creative Machines*, eds., Tarek R. Besold, Marco Schorlemmer, and Alan Smaill, v–xi, Atlantis Press, Paris, (2015).
- [3] S. Colton and G. A. Wiggins, 'Computational Creativity: The Final Frontier?', in *Proc. Europ. Conf. Artificial Intelligence*, pp. 21–26, (2012).
- [4] J. Cunha, J. Gonçalves, P. Martins, P. Machado, and F. A. Cardoso, 'A Pig, an Angel and a Cactus Walk Into a Blender: A Descriptive Approach to Visual Blending', in *Proc. 8th Int. Conf. Computational Creativity*, (2017).
- [5] C. Guckelsberger, C. Salge, and S. Colton, 'Addressing the "Why?" in Computational Creativity: A Non-Anthropocentric, Minimal Model of Intentional Creative Agency', in *Proc. 8th Int. Conf. Computational Creativity*, (2017).
- [6] A. Khalifa, G. A. B. Barros, and J. Togelius, 'DeepTingle', in *Proc. 8th Int. Conf. Computational Creativity*, (2017).
- [7] A. Liapis, G. N. Yannakakis, and J. Togelius, 'Computational Game Creativity', in *Proc. 5th Int. Conf. Computational Creativity*, pp. 46–53, (2014).
- [8] S. Linkola, A. Kantosalo, T. Männistö, and H. Toivonen, 'Aspects of Self-Awareness: An Anatomy of Metacreative Systems', in *Proc. 8th Int. Conf. Computational Creativity*, (2017).
- [9] T. Veale, 'Déjà Vu All Over Again: On the Creative Value of Familiar Elements in the Telling of Original Tales', in *Proc. 8th Int. Conf. Computational Creativity*, (2017).