

WCDCC 2025: First Workshop on Computational Design and Computer-aided Creativity 2025

Co-located with 16th International Conference on Computational Creativity (ICCC'25),
Campinas, Brazil, June 23, 2025.

Preface

Computational Design has become an increasingly influential area of inquiry and practice, emphasising the use of systematic, algorithmic, and programmable processes in the conception of design artefacts. By positioning computation as an active agent in design thinking—rather than merely a tool for representation or production—computational design enables designers to move beyond the constraints of conventional computer-aided design software. Through scripting, algorithmic modelling, and the development of custom software, designers extend both the methodological foundations and the expressive potential of design, supporting exploratory, iterative, and generative workflows.

Although computational approaches have been explored since the early days of digital computing, recent years have seen renewed momentum across a wide range of creative fields, including architecture, urban design, graphic and product design, sound and music, and other artistic practices. This resurgence is closely linked to advances in computational creativity, procedural generation, the growing availability of design tools with scripting capabilities, and the proliferation of creative coding frameworks. Together, these developments have prompted critical reflection on the future of design disciplines, reshaping professional roles and reframing the computer as a partner in conception rather than solely a means of execution.

The first edition of the **Computational Design and Computer-Aided Creativity** workshop took place in June 2025 in Campinas, Brazil, co-located with the International Conference on Computational Creativity (ICCC'25). The workshop was proposed by João Miguel Cunha, Tiago Martins, and Sérgio M. Rebelo (University of Coimbra, Portugal), with invited co-organisers whose expertise spans design research, creative computing, and applied practice: Stig Møller Hansen (The Danish School of Media and Journalism, Denmark), Janet Rafner (Aarhus University, Denmark), Jason Reizner (IU International University of Applied Sciences, Germany), and Moritz Schwind (University of Applied Sciences in Nuremberg, Germany). As an inaugural initiative, the workshop was proposed with the explicit goal of consolidating an emerging community around Computational Design within the broader computational creativity landscape, fostering dialogue between creative disciplines, design research, and computer science.

To accommodate the diversity of research and practice within the field, the workshop defined three distinct types of submissions: *papers* presented original research contributions, emphasising technical rigour, methodological clarity, and theoretical grounding; *pictorials* — short original submissions that emphasise visual communication as the primary means of conveying ideas; and *show-and-tell* — Presentation of already published work that are relevant to the workshop.

The workshop received a total of **21 submissions**. Following a single-blind peer-review process, **11 submissions were accepted through open review**, comprising **4 long papers** and **7 short papers**. In addition, **5 invited contributions**, either *pictorials* or *show-and-tell* presentations, were included in the final program. Collectively, these contributions reflect a broad range of disciplinary backgrounds, methodological approaches, and application contexts.

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The final program was organised into three area-based sessions. **Architecture, Structures & Urban Designs**, chaired by Tiago Martins, focused on computational approaches to spatial, structural, and urban-scale challenges. **Creative Computing in Art and Design Processes I**, chaired by Jason Reizner, and **Creative Computing in Art and Design Processes II**, chaired by Janet Rafner, brought together contributions exploring computational methods in artistic and design practices, with particular emphasis on creative workflows, tool-making, and reflective engagements with algorithmic systems.

As the first edition of the Computational Design workshop, this event aimed to establish a foundation for sustained engagement within the computational design community. The organisers hope that this initial iteration contributes to ongoing discussions on the role of computation in design conception and serves as a catalyst for future editions and continued interdisciplinary collaboration.

Organising Committee

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Tiago Martins, University of Coimbra, PT
Janet Rafner, Aarhus University, DE
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Jason M. Reizner, IU International University of Applied Sciences, DE
Moritz Schwind, University of Applied Sciences in Nuremberg, DE

Program Committee

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Website

More information about the workshop and related materials can be found on the workshop website: <https://computationalcreativity.net/workshops/computational-design-iccc25/> or <https://computational-design.dei.uc.pt/>.