



Special Issue of Archives of Design Research: **Artificial Intelligence and Computation in Design**

Aim and Scope:

Design is an action aimed at problem-solving, characterized as an explanatory process and supported by the deployment of creativity to foster innovation through reflective conversations. In the domain of design, practitioners frequently incorporate newly acquired information from conversations to update problem definitions and expand the scope of their designs. When design is approached as problem-solving, particularly in solution-focused design, the quality of a design hinges on the identification of a satisfactory solution from a pool of candidates generated based on a well-defined problem.

The field of computational design has long been dedicated to exploring ways of facilitating designer-computer interactions. Computational support has been employed to aid in various key phases of the design process. Design support systems have been developed to align with the sequential stages executed by human designers. However, the advancement of artificial intelligence (AI) in design has fundamentally transformed the design landscape, even in everyday contexts. The interaction between designers and systems has become increasingly intricate, enabling real-time redefinition of design problems, scopes, and directions, regardless of the process sequence. As design has shifted from a solution-focused to a problem-focused approach, the design process has grown more complex. Unanticipated "intelligent" computational supports now facilitate designer-computer interactions throughout the entire design cycle, fostering dynamic and spontaneous interaction rather than a linear progression.

Designers engage in cognitive and behavioral processes of divergence, exploring and generating novel ideas, as well as convergence, examining and selecting the optimal design solution based on the specific design problems and conditions. The primary objective of this special issue is to foster collaboration and engagement among designers, computing experts, thinkers and practitioners who possess a profound passion for design and its multifaceted aspects.

The first special issue of the **Archives of Design Research (SCOPUS indexed)** invites individuals interested in leveraging artificial intelligence and computational approaches to address design-related challenges across diverse fields such as art, graphic design, fashion design, product design, and spatial design.

Topics of Interest:

Topics of interest include, but are not limited to the following:

- **Human Involvement in Artificial Intelligence Design:** This topic explores the role of human input and collaboration in the context of artificial intelligence in design. It delves into how designers can actively participate in the automated design process, leveraging their expertise and creativity to enhance the outcomes. It investigates methods to strike a balance between automation and human intervention, ultimately aiming to optimize the synergy between human designers and computational systems.



- **Understanding Design through Computation:** This area focuses on utilizing computational methods to gain insights and deepen our understanding of the design process. By employing algorithms, simulations, and data analysis techniques, it aims to uncover patterns, relationships, and underlying principles in design. The goal is to leverage computation as a tool for discovering new design approaches, improving design methodologies, and fostering innovation in various domains.
- **Commercial & Pedagogical Applications of Artificial Intelligence in Design:** This subject explores the practical applications of AI design in commercial and pedagogical contexts. It examines how computational methods and technologies can be employed to enhance efficiency, productivity, and quality in the design and educational processes. It encompasses areas such as product design, architecture, fashion, graphics, and other fields where AI can be utilized to streamline workflows, optimize resource allocation, and facilitate decision-making.
- **Keywords:** Artificial Intelligence in Design; Computational Design; Generative Design; Human-AI Collaboration; Design Automation; Design Quantification; Design Optimization; Fabrication and Robotics.

Manuscript submission information:

To submit your manuscript to this Special Issue, please utilize the journal's submission platform, [ADR submission system](http://aodr.org/main.php) (<http://aodr.org/main.php>). Ensure that you have prepared your manuscript according to the journal's guidelines. During the online submission process, please select the article type "**SI: AI Design**" to indicate that your submission is intended for this Special Issue.

Timeline:

Submission Deadline:	January 30, 2024
Notification of First Round:	March 31, 2024
Revision submission Due:	May 31, 2024
Final decision:	June 30, 2024
Tentative publication:	Summer, 2024

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