



# Aesthetics of Connectivity for Empowerment – Considerations and Challenges

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## ABSTRACT

In an increasingly interconnected world, the aesthetics of connectivity significantly influence our interactions with data, AI, and associated products and services. What is aesthetics in design good for? Where can it be used to engage with contemporary troubles? This workshop aims to explore innovative approaches, methodologies, and technologies that take connectivity into design considerations to further enhance the role of aesthetics in empowering individuals. Through extensive deliberations on the nuanced relationship between connectivity, aesthetics, and empowerment, our foremost aim is to foster meaningful dialogue and collaboration among a diverse range of stakeholders, spanning researchers, practitioners, designers, artists, and industry professionals. This inclusive platform is poised to facilitate collective ideation and the development of pioneering solutions that empower individuals to thrive. Expecting an attendance of approximately 15 participants, the workshop is scheduled to span six hours.

## CCS CONCEPTS

• **Human-centered computing** → **Collaborative and social computing design and evaluation methods; Empirical studies in HCI.**

## KEYWORDS

Connectivity, Aesthetics, Empowerment

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## 1 BACKGROUND AND MOTIVATION

### 1.1 Connectivity Enables Complex Problem-solving

Connectivity is transforming the way we live, work, and design. New technologies such as the Internet of Things, Cloud Computing, Big Data, and Artificial Intelligence are enabling unprecedented levels of connectivity between people, devices, and systems [2]. This connectivity is driving the fourth industrial revolution and having a major impact on the way businesses are conducted. At the same time, connectivity is also empowering people and communities in new ways. It is making it easier for us to stay connected with loved ones, collaborate with colleagues, and access information and resources. However, it is also creating new challenges, such as the need to design products and services that are both technically and socially connected.

Increased levels of connectivity add additional layers of complexity, and hence new challenges for the tools and methods that are required in the design process. They transform the way we design in many aspects [21]. Designers need to develop new capabilities to design with connectivity in mind. This includes considering the physical and digital integration of products, following the system perspective, and pursuing the evolving life cycles of connected products and systems. Specifically, designers need to think about how to integrate sensing and actuating into products in a way that is both functional and aesthetically pleasing [9]. Designers need to consider the entire ecosystem of a product when designing for connectivity [6], including the network, power consumption, and interoperability. Designers are now challenged by designs that should be able to adapt to unforeseen updates and accommodate such life cycles [1]. By understanding these challenges and opportunities, designers can play a key role in shaping the future of our connected world.

### 1.2 Aesthetics of Connectivity for Empowerment

The word “aesthetica” was defined as the science of sensual perception by Alexander Baumgarten [3]. In the field of Human-Computer Interaction, aesthetics can be a powerful driver in design helping

connect dynamic form, social, and ethical aspects. Researchers brought up the concept of “aesthetic interaction”, as an experienced interaction with a product or system that has practical use next to intrinsic value, has social and ethical dimensions, has satisfying dynamic form, and involves the whole human being [11]. Through various creative outlets like art [17], music [12], dance [4], and object [18], individuals can convey their unique perspectives and experiences [8], facilitating deeper interpersonal connections [13] and empathy-building [16] within the digital realm.

Moreover, aesthetics in HCI empowers individuals to perceive the world through fresh lenses, igniting their imaginations [5, 19] and expanding the boundaries of what’s possible. Exposure to aesthetically pleasing designs can inspire creative thinking and innovative problem-solving, thereby enhancing user experiences and encouraging users to explore new potentials within themselves and their digital interactions [14]. Research also indicates that exposure to beauty and aesthetically pleasing interfaces can reduce stress [20], elevate mood [10], and enhance cognitive function [7], ultimately improving user well-being [15]. Aesthetics bridge the gap between users and the natural world, fostering a greater appreciation for the environment and enhancing the connection between individuals and their digital experiences.

Aesthetics contributes significantly to the well-being and quality of life of individuals engaging with technology. However, further exploration is needed to understand how to empower individuals through the aesthetics of connectivity, as the qualities are not apparent if connectivity is not the design consideration. For example, the key factors that impact empowerment may not only be the aesthetic qualities of an object or the aesthetic sensibility of an individual but also the aesthetic experiences that are derived from emotion and imagination. Moreover, the dynamic nature of aesthetics in HCI was emphasized as an essential element [11], which also brings challenges and complexity to aesthetic design for empowerment.

Connecting people and data can empower us to solve complex challenges by developing new designs that address the needs of a connected society. Aesthetics empowers individuals from a wide variety of perspectives. How can we use technical connectivity and aesthetics to facilitate social connectedness and experiences that lead to behavioral change, such as improved health, vitality, and well-being? It is worth further discussing and investigating the aesthetics of connectivity in specific areas, such as health, vitality, and well-being, to help people change their behaviors and lifestyles. By understanding the challenges and potentials of aesthetics of connectivity to facilitate behavior change, designers and researchers can develop new tools and interventions to help people live healthier, happier, and more fulfilling lives.

To address these challenges and pursue solutions, forming a community and hosting academic gathering events not only helps to collect a wide variety of diverse perspectives but also generates knowledge from practices about theories and methodologies that contribute to this field. This event started with discussions among some scholars and developed into regular annual workshops at HCI conferences (such as the International Federation for Information Processing - International Conference on Entertainment Computing). Since its inception, this will be our formal third gathering to accelerate our approaches to building a larger community with

interested researchers at DIS. We intend to cultivate meaningful discourse and collaborations among a diverse spectrum of stakeholders, including researchers, practitioners, designers, artists, and industry professionals. This workshop will provide a platform for sharing insights, exchanging ideas, and exploring new and emerging trends in this exciting area. We will explore the various themes presented by researchers at the workshop, exchange ideas, and facilitate conversations. We will also present a few of the exploratory themes that the organizers have discussed and share this knowledge through group discussion and collective synthesis work activities.

## 2 WORKSHOP GOALS

This workshop aims to explore innovative approaches, methodologies, and technologies integrating connectivity into design to enhance aesthetics and empower individuals. We aim to facilitate discussions and collaborations among researchers, practitioners, designers, artists, and industry professionals, providing a platform for sharing insights, exchanging ideas, and exploring new trends in this field. Research papers on topics such as aesthetics of connectivity for empowerment in HCI, practical cases, potential research directions, and design strategies are of mutual interest. Participants are invited to submit full research papers for peer review, with accepted papers scheduled for presentation and discussion. Accepted papers will be published in the ACM digital library or Ceur-ws.org, and authors will be invited to submit extended versions for a special issue in the "International Journal of Arts and Technology."

## 3 ANTICIPATED OUTCOMES

The workshop expects to achieve the following outcomes:

- Fostering collaboration to explore innovative design methods that integrate connectivity and enhance aesthetics for empowerment. Encouraging participants to identify commonalities in their work, facilitate discussions on challenges, and collectively brainstorm solutions. Summarizing group discussions on potential solutions and barriers in a final session.
- Summarizing challenges and future directions in the aesthetics of connectivity for empowerment, aiming to synthesize the workshop outcomes into a paper for next year’s DIS.
- Publish the submitted papers as workshop proceedings in the ACM digital library (preferably) or Ceur-ws.org.
- Invite all accepted papers to submit an extended version (with 50% or more new content) for a special issue on **Aesthetics and Empowerment** in the International Journal of Arts and Technology. **The proposal has been approved by the journal** (<https://www.inderscience.com/info/ingeneral/cfp.php?id=5797>).

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