Aesthetic Intelligence: Designing Smart and Beautiful Architectural Spaces

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Abstract. This paper reports on the first international workshop on Aesthetic Intelligence. The focus of the workshop is on the relevance of beauty and aesthetic values for Ambient Intelligence and the meaning of aesthetically pleasing design for usability, technology acceptance, and well-being in technology-enhanced spaces.

Keywords: Ambient Intelligence, Ubiquitous Computing, Smart Spaces, Aesthetics, Design, Architecture, Urban Informatics.

1 Towards Intelligent Spaces

Ambient Intelligence describes the integration of a multitude of tiny microelectronic processors and sensors into almost all everyday objects, which enables an environment to recognize and respond to the needs of users in an almost invisible way (see, e.g., [1]). The envisioned technologies "will weave themselves into the fabric of everyday life until they are indistinguishable from it" [2]. Through the integration of information, communication and sensing technologies into existing architecture, smart environments will emerge, which offer context-adapted services and assist their inhabitants in everyday activities. In a very general sense, the concept of Ambient Intelligence implies that some sort of intelligence surrounds us – somehow. But how does Ambient Intelligence manifest itself? Where does it show up and how do people, who the services are intended for, notice and interact with it? Should it stay invisible or should it form a perceptible digital layer augmenting the physical space? While many of these almost philosophical questions are still actively discussed in our research community, the integration of technology into physical spaces is already happening and changes our environment both visually and functionally.

Urban screens are a good example for this ongoing change. As large displays increasingly move into sight of our everyday city landscape, they are not limited

anymore to the public places of metropolises like New York or Tokyo. With the rapid advances in display technology in terms of size and cost, ambient displays are gaining increased presence in everyday life and in all kinds of environments. Less than ten years ago, for example, any public viewing of a sport event would have taken place inside pubs on large television sets. Today, we gather in public space and watch such happenings live on display walls. Information screens in airports or train stations are not located exclusively in the waiting hall anymore, but large, medium, and small sized displays are distributed across those places to provide helpful information for travelers. In trains, displays broadcast advertisements and show passenger information. This is just one of many examples illustrating how digital technology changes physical space. The focus of the workshop will be on the visual and perceptual possibilities that arise from the use of Ambient Intelligence technology both in public and private space. Another focus will be the relevance of beauty and aesthetic values for Ambient Intelligence and the meaning of aesthetically pleasing design for usability, and acceptance of the technology as well as for the well-being in technologically mediated spaces.

2 Aesthetics as a Design Criterion

Ambient Intelligence is still a relatively young research field and previous work mainly focused on questions of technical feasibility and more general aspects of human-computer interaction. While those are important aspects, it seems to be time to extend ongoing research activities and also include hedonic and aesthetic dimensions of design and usage. A variety of authors like, e.g., Hassenzahl [3] showed that users wish for more than the pure technical functionality and prefer devices with a high social and hedonic value. And as smart technical devices will be increasingly used within home environments, these aspects are likely to gain additional importance in the future. The first international workshop on Aesthetic Intelligences addresses this challenge by bringing together researchers from different disciplines to discuss the interrelation of functional, architectural, and aesthetic factors and their consequences for the design, use and acceptance of smart environments.

References

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