# Aesthetic Intelligence: The Role of Design in Ambient Intelligence

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**Abstract.** This paper illustrates the rationale behind the second international workshop on *Aesthetic Intelligence*. The workshop addresses the multiple facets of aesthetics in the design process of Ambient Intelligence technologies, especially in the fields of architecture, industrial and interface design as well as human-computer interaction.

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

## 1 Introduction

Ambient Intelligence refers to the integration of information, communication and sensing technologies into architectural spaces and thereby offers the technical basis for providing context-adapted services and assistance in everyday activities [1]. Over the last years, research in the field of Ambient Intelligence came to a point where many technical challenges have been addressed and most fundamental problems have been solved. First commercial Ambient Intelligence applications are already available and more sophisticated systems are likely to follow in the coming years, which will gradually transform our everyday environments into smart and attentive surroundings [4,5]. With the widespread integration of technology into living spaces, aspects of aesthetically pleasing design gain increased importance. Ambient Intelligence systems do not only have to meet technical requirements, but also have to blend into existing environments. Therefore, it is important to bring together research from relevant disciplines and offer them a platform for discussing the relevance of aesthetic values for Ambient Intelligence as well as the role of aesthetically pleasing design for usability, technology acceptance and user well-being.

## 2 Research Challenges and Workshop Topics

Previous work in the area of Ambient Intelligence mainly focused on technical aspects and general questions of user interaction in technology-enhanced environments. 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. Hence, this workshop explicitly aims at bringing together researchers from adjunct disciplines to discuss the interrelation of functional, architectural, and aesthetic factors and their consequences for the design, use and acceptance of Ambient Intelligence technologies.

This workshop builds on the results and insights gained during the first international workshop on Aesthetic Intelligences [2,3] held in Amsterdam, the Netherlands, on November 16, 2011. The upcoming workshop particularly addresses research challenges originating in the fields of architecture, design and human-computer interaction. In the area of architecture, research questions may include topics like smart buildings and spaces, intelligent and multimedia façades, urban screens and large public displays, innovative building and interaction materials, or novel living concepts. Design-related research challenges may address questions of user experience design, participatory design, emotional and hedonic design, interaction design, multi- and interdisciplinary design, as well as tools and design techniques for Ambient Intelligence environments. Relevant research in the field human-computer interaction includes human aspects of future and emerging technologies, user diversity, human-computer interaction in Ambient Intelligence environments, user- or human-centered design, emotional and affective user interfaces, as well as adaptive and tangible user interfaces for Ambient Intelligence.

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