

# DESIGNING PERSUASIVE INTERACTIVE ENVIRONMENTS: A HANDS-ON WORKSHOP TO EXPLORE INTERACTIVITY AND PERSUASION IN DESIGN

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**Abstract.** Ambient Intelligent environments are interactive environments that sense human behaviour and can respond intelligently. This workshop explores how interactive environments can be designed with persuasive quality, influencing human experience and behaviour. The workshop follows a research-through-design approach where practise-relevant insights are gained while designing. The focus will be on intuitive and rational decision-making, the role of aesthetics in persuasion, social and spatial influences on persuasion and the ethics of designing for persuasion.

**Keywords.** Ambient intelligence, persuasion, aesthetics, decision-making research-through-design, interactive prototyping.

## 1. Introduction and workshop goals

Ambient Intelligent environments are interactive environments that sense human behaviour and can respond intelligently through lighting, audio-visual media or physical adaptations [1]. Much research focuses on the technical feasibility of these interactive environments, such as the accuracy of sensing technologies and robustness of wireless communication. In this workshop we explore the persuasive quality of interactive environments on human experience and behaviour in semi-public spaces.

We propose a hands-on workshop intended for designers, human factors researchers and technologists in the field of ambient intelligence who want to explore, first-hand, the complexities and subtleties of designing persuasive interactive environments [2, 3]. During the workshop, interactive prototypes will be created aimed at influencing the behaviour of the Aml'12 conference visitors. By setting-up these interactive prototypes at the conference we can assess if the intended behaviours are

actually performed and stimulating debate between conference visitors at the same time.

The workshop organizers will provide interactive sketching tools enabling participants to build interactive prototypes quickly and intuitively without requiring much technical expertise [4]. Both Delft and Eindhoven University of Technology have extensive experience with hosting interactive prototyping workshops. The sketching tool consists of MAX/MSP software [5] connecting to a variety of Arduino sensors and actuators [6] (Figure 1). Workshop participants may also bring their own materials and compatible systems. Specifications on compatibility will be given in the call-for-participation. Technical and design expertise will be provided during the workshop to guide participants through the interactive prototyping process and to safeguard quality.

The workshop follows a research-through-design approach [7] consisting of two short design cycles where participants both design and reflect. Such an approach leads to practise-relevant insights in a short period of time. Here, designing involves fitting the possibilities of the interactive sketching tool, the spatial layout of the communal space and peoples' inherent social behaviours with the desired behavioural goal. Reflecting on design involves discussing how aspects of persuasion are embodied in a prototype's form and interactivity. The aim is to publish the results of the workshop in a shared publication, targeting the ambient intelligence community.



**Figure1. Impression of the courses: Interactive Technology Design and Interactive Environments at Delft University of Technology. Combining 'MAX/MSP' with the Arduino system allows for quick interactive prototyping.**

## **2. Topics to be discussed**

The focus is to explore the persuasive quality of interactive environments on human experience and behaviour. We connect to the work of Fogg [8] with a specific emphasis on design related issues as discussed by Lockton et al [9]. We invite participants to reflect on the following aspects of persuasion in relation to form and interactivity.

- Intuitive and rational decision making
- The role of aesthetics in persuasion
- Social and spatial influences on persuasion
- Evaluation methods for persuasion
- The ethics of designing for persuasion

## **3. Participants and procedure**

The intended audience of the workshop are designers, human factors researchers and technologists working in the field of ambient intelligence. Since we approach persuasion from a design perspective, participants without a design background should have an affinity with prototyping, creativity and multidisciplinary collaboration. Participants are asked to submit a short position paper (2-4 pages) demonstrating this affinity.

## **4. Schedule of the workshop**

We propose a full-day workshop that involves two short design cycles where participants both design and reflect (Table 1). At the start of the workshop, participants are introduced; design-teams are formed and they are briefed about their design cases. Design cases are prepared beforehand to get the workshop participants up to speed. For example, a design case might be to persuade the Aml'12 conference visitors to engage in conversation during conference breaks in the hallway or to persuade conference visitors to take the stairs instead of the elevator.

After the introduction, most of the workshop-time is spent on the two design cycles in which participants work together on the different design cases. The workshop ends with group presentations and discussion. The organizers may fine-tune the prototypes after the workshop has ended in order to have them function as stand-alone interactive installations during the conference.

**Table 1. Workshop Schedule**

Time	Activity
09:00 - 09:30	Welcome and introduction
09:30 - 10:00	Design case brainstorm
10:00 - 11:15**	Design cycle 1: action
11:15 - 12:00	Design cycle1: reflection
12:00 - 13:00	Lunch break
13:00 - 14:15**	Design cycle2: action
14:15 - 15:00	Design cycle2: reflection
15:00 - 16:00	Presentations and discussion
1600 - Evening	After the workshop, the organizers will detail the prototypes in such a way that they can function as stand-alone prototypes during the conference.
At the Aml'12 Conference	The organizing team will assess the effect of the prototypes on visitor behaviour during the conference breaks in a non-obtrusive manner
**	Coffee, tea, drinks and snack will be provided during the workshop

## 5. Applying for participation

The interested public is invited to submit a short position paper (2-4 pages) demonstrating related designs, research or visions on persuasion. The workshop organizers will set-up a program committee that will review the incoming submissions.

## 6. Marketing the workshop

A workshop website will be hosted by the Faculty of Industrial Design Engineering at the Delft University of Technology. Further exposure of the workshop is given by the Industrial Design department of the Eindhoven University of Technology and by CREATE-IT, the Applied Research Labs of the Amsterdam University of Applied Sciences. The Dutch design community is reached through the Platform for Creation and Innovation, 'Pakhuis de Zwijger' and Dutch design agency, 'Fabrique'.

## 7. Outcomes of the workshop

- Interactive prototypes that will be set-up at the conference communal areas that conference visitors can experience and debate.
- Practise-relevant knowledge on persuasion based on participant's first-hand experiences of the workshop.
- Website/Blog in which the organisers present their call-for-participation and multimedia registration of the workshop, targeted for the ambient intelligence community
- Shared publication based on the workshop results

## 8. References

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