CA4: ambient screen(s)

6700640 / creative application, semester 3, 6 ects

Æliens

course description – ca4: ambient screen(s)

The course description(s) are taken from the accreditation report Creative Technology (version 2.0).

contents The course is meant as an integrative project, with a special focus on the ubuquitous availability of screens outside the workplace and personal home computer. Projects in this course concern finding creative solutions for interaction with this multitude of screen displays.
Online reference(s):

- smart-its.org
- idisplays.info
- www.deutsche-telekom-laboratories.de/∼rohs/wikeye

Remark: If possible the project(s) will be executed in the Utwente VR facility, the T-Xchange-Cell: www.txchange.nl with the goal of developing scenario-based serious games.

perequisite(s) Completion of all first year courses

goal(s) & attainment target(s) The integrative nature of the CA5 project will contribute to find useful and interesting ways to combine smart technology and new media in novel applications.
The course aims at providing

- awareness of privacy and security issues when using public displays
- familiarity with developing concepts to facilitate interaction with non-computer screens
- fluency in content production workflow and project managent
- full literacy in applying learned skills to tackle problems in system and content development

Students are expected to be well-motivated, and will be stimulated in problem-finding and the exploration of creative solutions.

place in curriculum: integrative course in second year.

application area & motivating example(s) Off-computer screen displays include big urban screens on public squares, as well as medium size screens in shopping malls and lifts, as well as small screens that come with (mobile) gadgets or built-in consoles in buses or airplanes. To allow for intelligent interaction these screens may moreover be equiped with sensors and bluetooth. Interesting solutions are being developed, see online reference(s), that connect these screens with for example mobile gadgets, to support new patterns of shopping, tourism and game playing.

teaching method(s) The course will offer a selection of topics and projects, from which students may choose on the basis of their interest and specialization. Students will be encouraged to work in small, 4-5 person groups, of an interdisciplinary character, And will be closely supervised in all stages of the product-development life-cycle.

Feedback will be given in workshop sessions, and by assessing the products as made available online. Peer reviews will not only be used for feedback, but will also form part of the procedure of assessment and grading. Grading takes place by assessing the work in a presentation session, where students present and discuss their work and contributions to the group project..

special facilities Contacts with potential industrial or societal partners must be established, to acquire interesting projects with a sufficient degree of relevance and technical interest.

course outline(s) – ca4: ambient screen(s)

In this part a more detailed discussion will be provided of **topics**, **learning goals**, **materials** used, and the actual **structure of the course**, as well as a sketch of the **assignments** given. Also **references** to releveant literature is provided, including **online resources**. At the end, **advice for students** following the course will be given, as well as **hints for the instructor(s)**.

course topic(s)
As a *creative application*, which takes place at the beginning of the second year, the *ambient screen(s)* course has, strictly speaking, no actual course topics, but is rather defined as a collection of **high level requirements**. Topics addressed in the course include:

- the use of various-size screens in private and public space(s)
- adapative content – related to context and (possibly) user
- (smart) interaction using sensor device(s)
- information, entertainment & game play
- mixed & cross-media format(s) – spanning a range of display(s)

Again, a major principle in *creative application(s)* is **self-organization** and **learning by challenge**, that is finding suitable challenges for achieving the goals set.

learning target(s)
In terms of skills, competences, etcetera, the learning goals of this course can be indicated as follows:

- skill(s) – multi-display visual design
- knowledge – narrative(s) & interaction
- theory – communication & aesthetics
- experience(s) – medium scale cross-media application
- attitude – aesthetic sensibility

In accordance with the format of *creative application(s)* **self-management** is essential for the successful completion of the course.

lesson material(s)
The material that will actually be relevant during the course, will to a large extent depend on the actual topics chosen and the **context of application**, that is the nature and size of the space(s) in which **screen(s)** are deployed.

- canonical example(s) – art(s)
- (online) reference material(s) – visual design
- challenging target(s) – smart technology

In this *creative application*, notion(s) of **public** and **personal space(s)** will somehow play a role. The challenge here is not only to find appropriate visual design9s), in accordance with the size of the screen and its position in space, but ultimately to endow the screens with some **intelligence**, so that **content is adaptive** to context and (possibly) users or viewers.

course structure
To guarantee continuity and monitor progress we will have a sequence of sessiuons, as outlined below.

session(s)

1. introduction topic(s) & challenge(s)
2. brain storm(s) – concept development
3. planning – concept & application development
4. development scenario(s) and storyboard(s)
5. workflow(s) – asset development
6. basic media and communication theory

7. societal context of creative application(s)
8. delivery and presentation of final application(s)

Dependent on the size of the group, addtional mechanisms of **monitoring progress** may be needed, including logs, periodic accounts, and regular feedback or possibly even **shout-out sessions**.

assignment(s)
With the actual format depending on the application context, we can indicate as a minimal set of deliverables and presentations the items collected in the list below:

assignment(s)

- concept pitch presentation(s)
- planning - approach, realization, deployment
- report(s) – application development and installation
- evaluation(s) – summary of experience(s) and deployment result(s)

To guarantee that progress can be monitored and that results can be evaluated, the group(s) must **maintain a website** with all relevant information available in a suffienntly accessible way.

reference(s)
Also for the *ambient screen(s)* course, our **panorama** paper may serve as a reference, both with regard to **content** and as a **format** for the report(s).

1. Convivial Urban Spaces: Creating Effective Public Spaces, by Henry Shaftoe
2. Eliëns A. and Vyas D., Panorama – explorations in the aesthetics of social awareness, In Proc. GAME-ON 07, Nov 20-22, University of Bologna, Marco Roccetti (ed.), p. 71-75, EUROSIS-ETI Publication, ISBN 9789077381373
3. A. Eliëns, topical media & game development – media.eliens.net

A wealth of material and references can be found at my **topical media & game development** site, including tutorials and examples.

online resource(s)
As online resources, we suffice with a brief list of links to online descriptions of (art) installations and technology.

- doll face – nl.youtube.com/watch?v=zl6hNj1uOkY
- urban screens – www.urbanscreens.org
- facade(s) – www.psfk.com/2008/11/urban-screen-creative-use-of-media-facades.html
- deep screens – www.mediamatic.net/page/38147/en
- vision(s) – opencv.willowgarage.com/wiki
- integration – www.softintegration.com
- processing – www.openframeworks.cc
- JavaFX – www.javafx.com / www.sun.com/software/javafx/
- screen(s) – blogs.zdnet.com/perlow/?p=9497&tag=nl.e539

The students are encouraged to find additional information and links.

advice for the student(s)

Screens everywhere. So what, you may think. But, for example, when you see a running text on someones T-shirt, or, why not, moving images on the chair you are about to use, it might become more interesting. Think of what feeds these image, not only in a technical way, but what model of communication underlies the selection and programming of these (moving) images. Is it a broadcast, like on our television screen, a narrow-cast as in your icecream parlor or the elevator, or is it a point-cast, as in the screen you watch on the back of the chair in front of you? Furthermore aesthetic and technical issues abound, given the fact that all these screens differ in resolution, display technology, and luminance.

And, think of how to make these screens reactive to changes in context, changes such as the time of day, with different lighting conditions, but possibly also changes in the number and kind of spectators, that may be detected using sensors or image processing techniques. Indeed, spectators should be aware that they not only look at the screens, but the screens may observe the spectator(s) as well.

hint(s) for the instructor(s)

The *ambient screens* course is the first *creative application* of the second year. At this time, students will be more mature and have a suffient level of programming skills to deal with the technical issues involved in manipulating a collection of screens, that may differ in display technology, and that are (possibly) connected in a network, allowing for synchronization of content, and feedback by using sensors or cameras with (simple) image recognition, for example using the OpenCV framework.

afterthought(s)

www.cs.vu.nl/∼eliens/create/after-ca4-10.html

CA4/10: (4/5/11) – participant(s) / grade(s)
With a small class, 6 students, we started to reflect on the meaning of screens in our life. Subsequently, we started exploring technology, and thinking of applications that would suit the theme.

All in all the process went well, although the student needed continuous encouragement, read push, to keep working with focus. The presentations for external parties, that is Chris Haarmeyer, and later Dennis Reidsma were well received. Later, focus seemed to be a bit lost, in the sense that in the eyes of Gerrit van de Hoeven, the reflection and comparison with set goals was inadequate.

I was generally satisfied with the final results, that is the installations presented in smart xp, although I found that the results did not meet my intial expectations as a spatial installation, since apart from a lack of (truly) compelling context, there was also not sufficient (visual) drama and aesthetic impact. All abit too quick and nerdy, so to speak. But then again, it is a process, and as such not only one with sufficiently satisfyinh results, but also providing a good start for conrinuing work in the new media track on persuasive technology and serious games.

So far, no students submitted feedback on the course. A pity, since it is still worthwhile to know how such a course is received.

As a final remark, overall the representation of the work, for this course but also for other courses, in the individual students portfolio is/was inadequate, and this should be improved! Regrettably, this seems not to be important in the eye of most of the creative technology staff. Nevertheless, the credo was and is: the creative industry is a portfolio industry!