



SDES9315 Tangible Interfaces and Interactive Displays

Term T1, 2020

Course Information

Units of Credit: 6

Course Overview

Course Description

Interactive exhibits in museums, visitor centres and gallery settings, enable visitors to engage with complex materials, revealing hidden connections and providing a shared focus for active exploration and conversation. In this studio, you will research, design and produce an interactive exhibit for a museum or visitor-centre, and explore approaches to interfacing with multimedia content (i.e. images, audio recordings, videos) that go beyond conventional keyboard, mouse and touch screen interactions to explore the possibilities of more tangible and physically dynamic ways of interacting and exploring multimedia materials through a range of sensing technologies from RFID tags, to gestural interactions and other touch and movement sensing technologies.

Building on skills and knowledge developed in Interaction Design: Foundations for Human Computer Interaction, you will advance your skills in the design, production and evaluation of interactive exhibits, with a focus on ergonomics, interaction aesthetics, electronics and the manipulation of audio-visual materials. You will develop familiarity with theories and principals of interface design, signal-mapping, interaction aesthetics and exhibition design and apply this to the development of a functioning prototype exhibit based on research into emerging real-world applications for interactive displays and interpretive systems in the field of exhibition design. Lectures, case studies and tutorial presentations will introduce you to the principals of interface design, signal-mapping, and interaction aesthetics, and hands-on technical workshops will enable you to develop your skills integrating off-the-shelf components and systems with software tools for navigating immersive visualisations.

Course Learning Outcomes

On completion of this course, the student should be able to:

1. Demonstrate an understanding of the role of the interface in the design and production of interactive exhibits - how user experience and engagement is facilitated and transformed through the design of interface hardware and software and associated displays.
2. Develop knowledge and apply skills in the development of tangible or embodied interfaces for controlling interactive exhibits, using electronic components, or off-the shelf sensor hardware.
3. Employ ideation, sketching and prototyping processes to produce engaging interactive designs, grounded in a close examination of the exhibition subject matter, interface affordances, interaction contexts and technical constraints.

Teaching and Learning in this Course

This courses uses a variety of teaching approaches:

Blended/online

- Review - assessment tool
- Turnitin - originality checking
- Moodle - Learning Management System

Assessment

	TITLE	WEIGHTING	ASSESSMENT TYPE
Assessment Task 1	Cardboard prototype experiments	20%	Project
Assessment Task 2	Interaction affordances	30%	Project
Assessment Task 3	Interactive exhibition	50%	Project

Resources

Norman, D.A., 2013. Fundamental Principles of Interaction; AND The Seven Stages of Action, in The design of everyday things: Revised and expanded edition. Basic books, pp. 10–36; pp. 71–73. URL: <http://cc.droolcup.com/wp-content/uploads/2015/07/The-Design-of-Everyday-Things-Revised-and-Expanded-Edition.pdf>

Ullmer & Ishii, 2000, 'Emerging frameworks for tangible user interfaces', IBM systems journal, 39(3.4), pp.915-931. URL: <http://alumni.media.mit.edu/~ullmer/papers/tui-millennium-chapter.pdf>

Simon, N., 2010, Chapter 1: Principles of Participation, in The participatory museum. Museum 2.0 URL: <http://www.participatorymuseum.org/chapter1/>

Hornecker, E. and Buur, J., 2006, Getting a grip on tangible interaction: a framework on physical space and social interaction, in Proceedings of the SIGCHI conference on Human Factors in computing systems (pp. 437-446). ACM. URL: <http://www.ehornecker.de/Papers/FrameworkCHI.pdf>

Simon, N., 2010, Chapter 4: Social Objects, in The participatory museum. Museum 2.0 URL: <http://www.participatorymuseum.org/chapter4/>

Ciolfi and Bannon, 2003, Learning from museum visits, in Proceedings of the International Conference on Computer-Human Interaction (pp. 63-67). URL: https://www.researchgate.net/profile/Liam_Bannon/publication/228981310_Learning_from_museum_visits_Shaping_design_sensitivities/links/02e7e524be9ffa950e000000.pdf

Simon, N., 2010, Chapter 10: Evaluating Participatory Projects, in The participatory museum. Museum 2.0 URL: <http://www.participatorymuseum.org/chapter10/>