INTRODUCTION TO SOFT WEARABLES

Start:	17/11/2015
End:	17/11/2015
Timetable	Tuesday, 09.00 to 17.00 h.
Duration:	8 hours
Price:	330 €
Registration:	REGISTRATION
Location:	Eurecat Centre Tecnològic. Centre de Recerca i Transferència Tecnològica Tèxtil Plaça Indústria, 1 08360 Canet de Mar (BARCELONA)

Introduction

Using smart textiles and soft electronic interfaces in wearables opens up the opportunity to engage with wearers' senses in diverse and subtle ways. A knitted garment, for example, can deform and reform as the body moves and pushes against the fabric. When augmented with smart capabilities, such deformations may be used to sense engagement and trigger events. Other fabrics embody still other capabilities, and afford diverse architectures when formed into clothing. The qualities of interaction made available through these capabilities differ from those that are possible using gadget-style wearables where components and their surrounding architecture are often rigid. The inherent flexibility – of fabric, potential architecture, and parameters of engagement – engender subtle call and response architectures that may not otherwise be enabled. Soft wearables can thus allow us to move away from screen- and device-centric interactions and regain control of our bodies and our surroundings.

Soft wearables draw from divergent disciplines that may be broadly separated into design, production and context-related behaviours or use. Following the industrial revolution, these different and varied aspects – which until then had been handled by master craftsmen and women – moved to the hands of distinct specialists: designers, technicians and social scientists, who undertook their distinct activities in complement. More recently, the proliferation (and resulting democratization) of digital fabrication processes and physical computing platforms have been reducing this gap. Nowadays, we can program not only production process, but materials and their behaviours. However, the opportunities of this (re-)convergence seem still to be overshadowed by the challenges. Technologies that support rapid testing at any level (design, production and behaviour) provide an opportunity to design, prototype and test in context. Yet the current trend seems to be for designers, technicians and other specialists involved in the design, production and development to work at desks, in front of computers, from a distanced perspective, a 3rd point of view. This approach seems to downplay, or at times completely overlook, the fact that bodies are not renderings and behaviour is far more than a thought experiment, no matter how sophisticated the visualization. Designing within a representation cannot accurately provide a sense of felt experience, and yet this is how felt experiences are largely designed and produced.

Learning goals

Soft wearables include clothing and textile-based accessories that incorporate smart textiles and soft electronic interfaces to enable responsive and interactive experiences. When designed well, they leverage the cultural, sociological and material qualities of textiles, fashion and dress; diverse capabilities and meanings of the body; as well as the qualities and capabilities afforded by smart and programmable elements. Textiles behave in particular ways. They are part of culture. No matter a person's views on fashion or dress, they will have an intimate relationship with textiles, as they are one of the few products worn much of the time, close to the body. When designing wearables a designer must consider a range of requirements that do not typically demand focus when designing products that are not worn, including: a particular sensitivity for material details; an eye for fit and comfort on bodies with perhaps diverse and idiosyncratic movement capabilities; openness to a diversity of meanings that may be generated; and consideration of wearers' intimate relations with technology. This one-day course will teach you what are soft wearables, how to design them, where can you find them now and why you should work on this area.

This course targets

Fashion designers tired of seeing horrible wearables and smart garments online and on the catwalk. Electric and Software Engineers interested in the possibilities of bringing technology close to the body. Textile designers and engineers that want to be challenged to integrate electronics with soft textiles. Textile companies, start-ups and and anyone else that is triggered by the topic.

Language

The presentations will be in English. Besides the visits, demos and debate, the presentations will last around 40 min. and will have 5 extra min. for questions.

Detailed program

09:00 to 09:20 Coffee and registration

09:20 to 09:30 Introduction to the course by Oscar Tomico
09:30 to 10:15 Soft wearables, current situation and trends by Laura Cleries
10:15 to 11:00 The value of textile explorations by Petra Vonk
11:00 to 12:15 Visit to the CRTTT Research Center, intro by Miquel Soler, head of CRTTT
12:15 to 13:00 Textile thinking for soft wearables by Troy Nachtigall
13:00 to 13:45 The role of material explorations, the body and context in the design of soft wearables by Oscar Tomico.

13:45 to 15:30 Lunch and demos of wearables from EURECAT, intro by Virginia Garcia, head of the EURECAT functional textile department.

15:30 to 16:15 Reimagine Textile Toolkit for designers by Evelyn Lebis.
16:15 to 17:30 Debate moderated by Oscar Tomico on the future of soft wearables with fashion designers from ArtEZ (the Netherlands) and designers and engineers from EURECAT Mataró and CRTTT Research Center.

17:30 to 18:00 Closure and networking drinks.

Organizers

EURECAT Functional Textiles department

EURECAT is the Technology Centre of Catalonia. Providing the industrial and business sector with differential technology and advanced expertise, it offers solutions to their innovation needs and boosts their competitiveness in a fast-paced environment. EURECAT is the result of the integration of the most important technology centres from the TECNIO network. The EURECAT's functional textile department is very active in public R&D projects funded by the EU commission, as well as by the Spanish and Catalan agencies. It participated in the following EU projects: Dephotex (as coordinators), in which textile based photovoltaic were developed, Powerweave in which photovoltaic technology was developed but this time at fibre level (together with fibre-based capacitors), ML2 in which it develops inkjet-printed electronic devices. It is worth to mention the Catalan projects "Industrusió" and "Rolling light" in which it develops a poltrusion process to manufacture textile based polymer composites and roll-to-roll printed electroluminescent lamps on top of textile substrates. Moreover, the functional textile department is actually executing several projects in the field of wearable solutions for the Health sector, being Wiisel (as coordinators) and Temis the most relevant examples at EU level.

CRTTT : Research Center for Textile Technology of Canet de Mar

CRTTT develops textile-based products for applications in sectors such as automotive and aerospace, industrial, medical, etc. The use of materials like carbon fiber, high-performance fibers, resins or a combination of various fibers for composites are some of the basic materials you work of the research group, for together with equipment for their own development and equipment for analysis and characterization of physical-chemical laboratory, secure new products for real market applications. The centre has a large textile laboratory containing a wide range of textile machinery, mainly of knitting machines appropriate for the production of weft and warp knitted fabrics for technical use. Among them, one of the newest acquisitions is the Comez Raschel machine with double needle bed suitable for the development of 3D knitted fabrics for technical applications

Reimagine Textile

Reimagine Textile is a collaborative network that connects the main agents to redefine the the textile industry of the XXI century. New materials, production processes, channels, digital data, electronic devices, sensors and hyper connectivity are transforming profoundly the way we innovate. Reimagine Textile intends to be a key player in this revolution merging textile, technology, innovation, talent, new business models, new design skills and digitization. It is an ecosystem based on open philosophy: its members collaborate, share, co-work, co-create, co-invest and connect. The 5 axes of Reimagine Textile are: technology, industry, education, entrepreneurship and investment. It is composed of companies, entrepreneurs, technology centers, FabLabs, design schools, universities, investors, mentors, incubators, accelerators, consultants and associations. The portfolio of services to members of the network include a laboratory for innovation, prototyping tools, advanced radar technology, incubation and technological business acceleration, mentoring, financing, consultancy and support in the approach to market new business models as well as networking and dissemination activities.
TU/e ID Wearable Senses

The appearance of smart textile technology leads to completely new possibilities to design for human wellbeing. At the Eindhoven University of Technology, department of Industrial Design, the Wearable Senses theme explores this emergent design space in a cooperative effort between education, research and industry. We found this calls for a new design practice. A practice that acknowledges that textiles are an intimate and central element in daily life, completely interwoven with our conscious and unconscious behavior and identity. A practice that exhibits a sensitivity to embodied interaction, acknowledges the importance of posture and movement, and appreciates the 1st person perspective. A practice that confronts the practicalities of integrating the worlds of electronics, fashion, manufacturing and design.

Speakers

Oscar Tomico

Dr. Oscar Tomico is Assistant Professor of the Designing Quality in Interaction Research Group and part of Wearable Senses at Eindhoven University of Technology. Current projects focus on the textile industry and involve stakeholders during the design process to foster cooperation and reflective practices between participants to frame the design space, collaboration space and reformulate their design opportunities. He is project leader of the Material science and design fiction (KIEM 2015), the Smart Textile Services project of the Dutch Creative Industry Scientific Program (CRISP 2011), a partner in the Crafting Wearables research project (CLICK 2013) and work package leader in the ArcInTexETN (H2020 ITN 2015). He co-organized of the Accenture (Wearable) Tech meets Design event (Eindhoven, 2015), the Careful Designs and Hypercrafting Fashion events (Waag Sociecy, Amsterdam, 2012, 2013, 2014), the "Baltan Open Lab: Wearable Senses" workshops and exhibition (NATLAB, Eindhoven, 2013, 2014), the eTextile Sweatshop (V2_, 2012) and the Crafting Wearables breakout session in The Future of Fashion is Innovation (MoBA, Arnhem, 2013). He has been moderator in the Craftism Design Debates (Design Academy Eindhoven, 2012). He curated the Systems Design - Eindhoven School exhibition at DHUB (Barcelona, 2012) and the "Smart Textiles - Wearable Services" exhibition at the TextielMuseum (Tilburg, 2015).

Petra Vonk

Dutch textile designer, Petra Vonk (b.1966), opened her design studio in Amsterdam after graduating from the Eindhoven Design Academy in 1990. Her work is characterised by a marriage of craft and technology, and a questioning of the boundaries between tradition and innovation. Playing with the characteristics that are bound within specific materials and techniques, she creates often new and unexpected concepts and applications. Through the use of repetition in abstract pattern designs, her designs experiment with transparency, while contrasting materials and progressive techniques arouse curiosity. Design objects display expressive visual and tactile qualities with an emphasis in functionality, be it to enhance the acoustic properties of a space or offer intimacy to an interior by means of impenetrable graphic patterns. Her work has been exhibited at the Tilburg Textile Museum, Museum Onze Lieve Heer op Solder in Amsterdam and at the Museum Arnhem. She has been commissioned for work by private clients and museums including Rijksmuseum, ZuiderZeeMuseum and the Tilburg Textile Museum. She is teaching experimental textiles and knits design at the Amsterdam Fashion Institute and is guest lecturer at several other arts schools including Akademie Maastricht and Artez.

Troy Nachtigall

Troy is an expert in Wearable Technology, Design, and Internet of Things. Troy specializes in technology that relates to design. From IT networks to tubular knitwear machines, computer pattern making to finished product, Troy strive to realize a future where there is little difference between the two fields. Troy's studies carried him from computer sciences in the Rocky Mountains to Fashion Design in New York City. It was from there the production centers of Europe entered his worldview. Troy started studying Italian and studying abroad. Upon graduating he went back to Florence to be close to the design and production of clothing and design objects designing collections for Hugo Boss, Calvin Klein, Jean Paul Gaultier and Emilio Cavallini. Italy has expanded Troy's design in a multitude of materials/techniques such as Knitwear, Denim, Leather, Tailored suitings, fine dresses and technical fibers. In a brief period Troy was exposed to a complete world of Fibers, Textiles, Yarns, Knits, Wovens, Bonded, Hide and Fur. This passion led Troy back into University when he was asked by the Director of Pitti Imagine to teach and research Digital Modeling for Fashion Design at the IUAV University of Venice. These themes have been expanded into Wearable Technology, 3D Modeling/Printing, Interaction Design, and New Media Graphic Design which he teaches at the IED Institute of European Design, and ISIA in Florence. Troy is a member of the Wearables for Italy Team that explores Wearable Applications in Florence www.wearabletechnology.it and a founding member of the Florence Fab Lab. Troy currently has PhD position in Digital Fabrication for Fashion Design part of the ArcInTexETN network.

Speakers

Evelyn Lebis

The award winning wearable technology designer Evelyn Lebis (Unique Award Material and Process in Future Fashion Design, Sustainability Center, London, England) studied at the Swedish School of Textiles in Boras, Sweden and Fashion Design at Art School Willem de Kooning in Rotterdam the Netherlands. During her studies she has been practicing Haute Couture at atelier Christophe Coppens in Brussels, (No Reference project) and danced contemporary and classical ballet at the Palais des Beaux Arts in Brussels. Through her startup company, Saturday Light Fever, Evelyn Lebis gained experience in wearable technology and creative storytelling for clients in Performance art, Fashion and Advertising.
Evelyn collaborates with tekniska Museet Stockholm, Science center AHHAA, Tartu, Creative Lab Helsingborg and Mini Maker Fair (Sweden and Estonia) to find solutions and bridge the gap between technical “know how” and creative development. She developed wearables and materials to illustrate to the general public what technology can offer to the creative industries. Evelyn also worked as a smart textiles consultant for Universities (UPM, HB) and currently works at technological center Eurecat Mataro in Spain where she develops wearables, gives workshops and facilitates technology transfer within Reimagine Textiles.

Laura Cleries

Laura is best known as a future lifestyles detective, and works as freelance consultant, designer and university lecturer. With both scientific and creative backgrounds – she holds a PhD in Materials Science and a degree in Design-, she works at the intersection between innovation, design, textile, color & materials, technology, trends and future products. She holds 20 years of international professional experience working as a curator on textiles innovation for materials companies and libraries (Material connexion, MaterFad), a materials consultant for design studios (Moatti&Rivière, EGJ), trends researcher for various international forecasting publications (WGSN) and as a home textile designer in international fashion design companies (Zara Home). She is the founder of MATERIALITY, an innovation consultancy and creative laboratory around the world of materials. Her role is to inspire and help innovate companies, organizations and individuals.

Information

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