What's Media Technology?

@HRO / Rotterdam University of Applied Sciences communication, media & info-tech (CMI)

media:
- technology (creative, user centred)
- design
- management
- computer science:
  - general
  - business
  - technology

Why dev devthis?

Developments in ICT - the web as old school
- interactivity & networking
- context sensitivity
- social media
- adaptivity & adaptibility
Developments in professional education
- prepare for the future: research skills
- apply scientific research

Fun & Learning 4 Students
- DIY between the internship & the thesis

Basis knowledge / competences

Competence-based:
- cooperate in projects
- technology (web, games)
- creativity & concepts
- user centered design (design steps, principles, tools)

"New topics"
- Ubiquitous computing, social media, internet of things, sensors, open data, semantic web

DevThis

Teams of 1 ... 5 students
- a social, mobile, context-sensitive app
- work on a project of your own choosing

DIY: Pick your own approach, tools ... acquire knowledge about platforms, toolkits, SDK's ...

Classic: Theoretical basis in the lessons via lectures, scientific papers, video's ...

Social: Mini-lectures / wiki to share one's knowledge and abilities with co-students

DevThis assignments: DIY teaching

Develop a mobile social context-sensitive application on iPhone, Android to enhance social cohesion in the local community.

- Concept, poster, design method, reqs & specs, presentation, code, demonstrator and write a report and a scientific paper
Theoretical basis: 'classical' teaching:

- lectures & scientific papers

  - ubicomp, pervasive, ambient
  - interfaces: AR / VR, tangible, natural, gestural, sensory, adaptive ...
  - human perception, vision, speech ...
  - design methodology
    - agile, participatory, co-design ...
    - usability lab, home lab & living lab ...
  - internet of things, nfc/rfid, sensor networks, semantic web, open data

Example assignments

- read
  - Weiser (1991), computer in the 21st century
  - Harper et al. (2007), HCI in the year 2020
- examine
  - www.grindr.com
  - common.sense-os.nl
  - Santoro et al. (2007). A multimuseum guide
- do
  - analyse the structure of a conference paper
  - prescribe some relevant papers to prepare for your mini-lecture

DevThis assignment: social teaching

- Your ambitions
  - how does generative art work?
- Your project
  - a drag & drop CMS prototype
- Mini-lecture
  - object recognition on a mobile phone
- Workshop
  - a scrum, arduino ... session

>> Skills & knowledge are shared in the classroom
>> Insights are accumulated / shared in a Wiki

Example projects (1)

- eg. Poken, 4Square, Grindr ...

WhereU@

Socialize this [demo](#)

In the Clouds

Project deliverables

- projectplan / research
- vision & concept: poster
- design & technical specs
- code / prototype / demonstrator
- presentations
- bonus mark: scientific paper / demo

>> Students learn how to do scientific research
>> Research contributes to staff research

Example projects @ SensorLab 2012

- Wifi broadcasting @ site
- Building access control
- Mobile money
- Indoor climate control
- Bluetooth remote for old TV's
- Ubiquitous gaming in & with Sensorlab
- 3D aerial photography
- Herba sense
- Facial recognition & authentication
Further developments
- until now:
  - mobile web, location-based services (GPS) to sensors, rfid, IOT, adaptive interfaces
  - increased quality - also due to research skills and access to the ACM digilib papers & posters
- future:
  - a research line in the curriculum - papers living lab - past the usability lab, smart home sensorlab, fablab: design in the wild

Founding developments
- media
  - interactivity & networking
  - context sensitivity
  - social media
  - adaptivity & adaptability
- professional education
  - research skills
  - apply scientific research (& do research with students)
- ubiquitous computing, social media, internet of things, sensors, open data, semantic web

Some Trends
- printing - web - cms - mobile web - apps - services information interactive software mashups
- mainframe - mini - pc - internet - web - mobile - iot functional usable personal ux ecology
- Trends are messy as technology is (Dourish)
- Trends are intertwined not isolated
- So: how to model trends for practical use?

eg. Harper: Being Human - HCI in 2020
- GUIs to Gestures
- VDUs to Smart Fabrics
- Handsets to the World in our Hands
- Simple Robots to Autonomous Machines That Learn
- Hard Disks to Digital Footprints
- Shrink-Wrapped to Mash-Ups
- Answer-Phones to Always-On

DevThis topics
- HCI
- ubiquitous/ambient/pervasive computing
- location and context sensors
- visual systems and object recognition
- augmented reality
- internet of things
- semantic web and metadata
- open data/city cloud
- exploratory, agile & co-design methods

Content Developments
- Tangible interaction - touch, speech, gestures, sensing and recognizing
- Mobile networked applications
- Smart - intelligent/agency; personal, adaptive, smart, AI, persuasive, distributed intelligence, recommender systems
- Sensitive - intelligent/sensitivity; context sensitive, location-based, ambient/pervasive/ubicomp
- Social, collaborative - social media, h2h, crowd, social & affective bots
- Connected - oda, cloud, smart cities, services, mash-ups, rfid/nfc
Design Developments

- User centredness: co-creation, co-design, scenario-based design, participatory design ...
- Design exploration: fab-, sensor-, living-labs;
  - sensorlab: concept development
  - living labs: product development
- Patterns & frameworks (!?)

myself: 'exploratory design'
Fallman, D. (2003) @ CHI
Network focussed Design (Booreiland)

A diabetes II scenario

Ms. Brown is a vital 72 year old, a bit forgetful and well overweight. For three days her blood glucose level has been too high.

> Causes
  - forgotten medication, diet
  - measurement error
  - faulty device

> Remedies
  - call for help (assistant, nurse, ...)
  - measure again
  - increase medication

(SuperAssist project @ TU Delft - MMI Group)

An supportive agent system

- Intelligent personal assistants
- Multi-user multi-agent situation
- Cooperative problem-solving

(SuperAssist project @ TUDelft - MMI Group)

IOT design - structure

- Technical know-how declines
- Creativity increases
- Cooperative problem-solving

IOT design - process

- IoT design as media or web design++
- Phases are NOT linear

DevThis: have students investigate & design future media concepts

Thanks!

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http://med.hro.nl/haang/
http://members.upc.nl/g.haan24/
http://www.humancenteredict.nl