



VRIJE
UNIVERSITEIT
BRUSSEL

Next Generation User Interfaces

Course Review

Prof. Beat Signer

Department of Computer Science
Vrije Universiteit Brussel

<http://www.beatsigner.com>





Course Summary

1. Introduction

- history of human-computer interaction
 - analogue computers, desktop metaphor, innovative forms of interaction
- interface types
- natural user interfaces

2. Interaction Design

- interaction design process (lifecycle model)
 - establish requirements, design alternatives, prototyping, evaluation
- usability and user experience goals
- design principles
- examples of good and poor design
- interaction design approaches
 - e.g. user-centred design



Course Summary ...

3. Requirements Analysis, Prototyping and Evaluation

- types of requirements
 - functional requirements, data requirements, environmental requirements, ...
- different forms of data gathering and analysis for requirements
 - interviews, focus groups, direct observation, ...
- Prototyping
 - low fidelity vs. high fidelity
- types of evaluation
 - controlled vs. natural setting
- DECIDE evaluation framework
- usability testing and field studies
- inspections and analytics
- GOMS model, keystroke level model and Fitts's law



Course Summary ...

4. Information Architectures

- personal information management
- memory types
- PIM systems
- RSL metamodel
- cross-media PIM and MindXpres

5. Multimodal Interaction

- human senses
- Bolt's "Put-that-there"
- multimodal fusion and fission
- ten myths of multimodal interaction
- CASE model and CARE properties



Course Summary ...

6. Pen-based Interaction

- history and affordances of pen and paper
- digital pen and paper solutions
- gesture design guidelines
- paper: *Interactive Paper: Past, Present and Future*

7. Interactive Tabletops and Surfaces

- enabling technologies and frameworks
- multi-user tabletop interfaces
- applications



Course Summary ...

8. Gesture-based Interaction

- gesture types
- gesture recognition devices
- gesture spotting and recognition solutions
- paper: *Gestural Interfaces: A Step Backward In Usability*

9. Tangible, Embedded and Embodied Interaction

- history of graspable and tangible user interfaces
- applications
- tangible bits and radical atoms
- paper: *Radical Atoms: Beyond Tangible Bits, Toward Transformable Materials*



Course Summary ...

10. Virtual and Augmented Reality

- technologies
- VR navigation and interaction techniques
- augmented reality techniques
- applications

11. Implicit Human-Computer Interaction

- context
- intelligibility
- affective computing
- emotion classification models
- emotion recognition modalities



Exam



- Exams will take place on *January 19/20, 2017*
- Oral exam in English (20 mins slot)
 - covers content of lectures and exercises
 - counts 40% for the overall grade
 - 5 mins questions about the assignment
 - 15 mins questions about the course content (no preparation time)
- You will have to register for a specific examination slot via PointCarré
- Overall grade = oral exam (40%) + assignment (60%)
 - students have some flexibility in distributing the grades for the assignment (± 2 points)



Exam ...

- Submission of the assignment and video via PointCarré (dropbox)
 - *deadline: December 23, 24:00 (UTC)*
- The exam will cover *all the content presented in the lectures* as well as *any additional information from the exercise sessions*
 - *includes the videos* shown in some of the lectures
- Make sure that you *understand the basic concepts*
 - however, we might ask questions at any level of detail to evaluate your knowledge
- Make sure that you can report about any aspects of the assignment



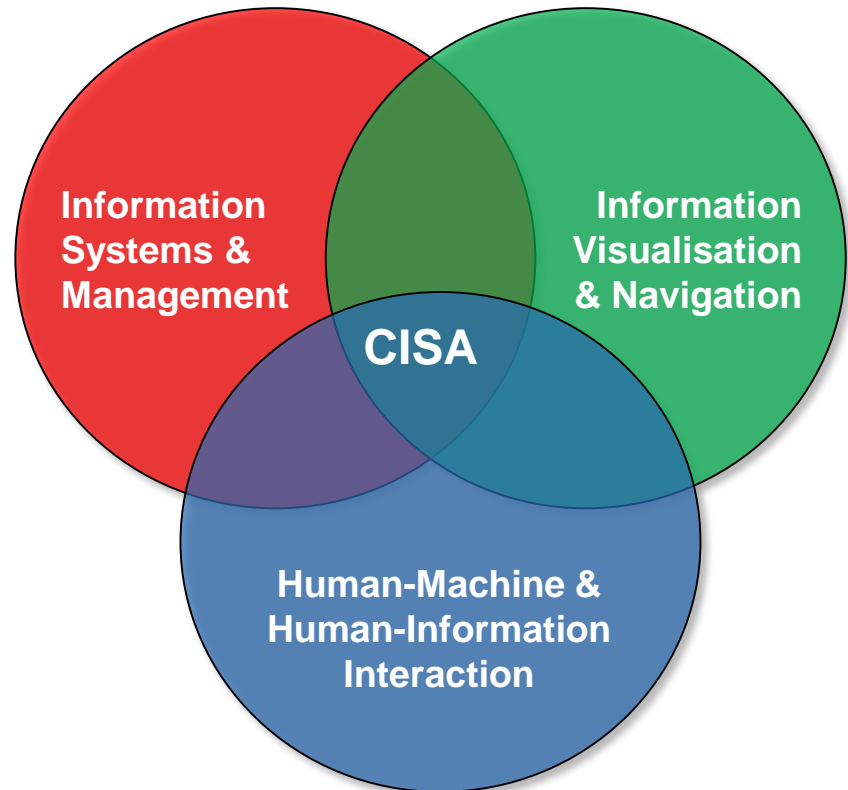
Exam ...

- Remember to *read the following four papers* as they form part of the course material
 - B. Signer and M.C. Norrie, *Interactive Paper: Past, Present and Future*, Proceedings of the 1st International Workshop on Paper Computing (PaperComp 2010), Copenhagen Denmark, September 2010
 - D.A. Norman and J. Nielsen, *Gestural Interfaces: A Step Backward In Usability*, interactions, 17(5), September 2010
 - H. Ishii, D. Lakatos, L. Bonanni and J.-B. Labrune, *Radical Atoms: Beyond Tangible Bits, Toward Transformable Materials*, interactions, 19(1), January 2012
 - M. Weiser, *The Computer for the 21st Century*, ACM Mobile Computing and Communications Review, July 1991



WISE WEB & INFORMATION SYSTEMS ENGINEERING

CROSS-MEDIA INFORMATION SPACES AND ARCHITECTURES (**CISA**)



Prof. Dr. Beat Signer
Interactive Paper, Cross-Media
Information Architectures



Sandra Trullemans
Personal Cross-Media
Information Management



Audrey Sanctorum
User-defined Cross-Device and
Cross-Media Interaction



Reinout Roels
MindXpres: Extensible Content-
driven Presentation Tool



Lars Van Holsbeeke
Smart Environments, Implicit
Human-Computer Interaction



Dr. Ahmed A.O. Tayeh
Open Cross-Media Authoring,
Fluid Document Formats



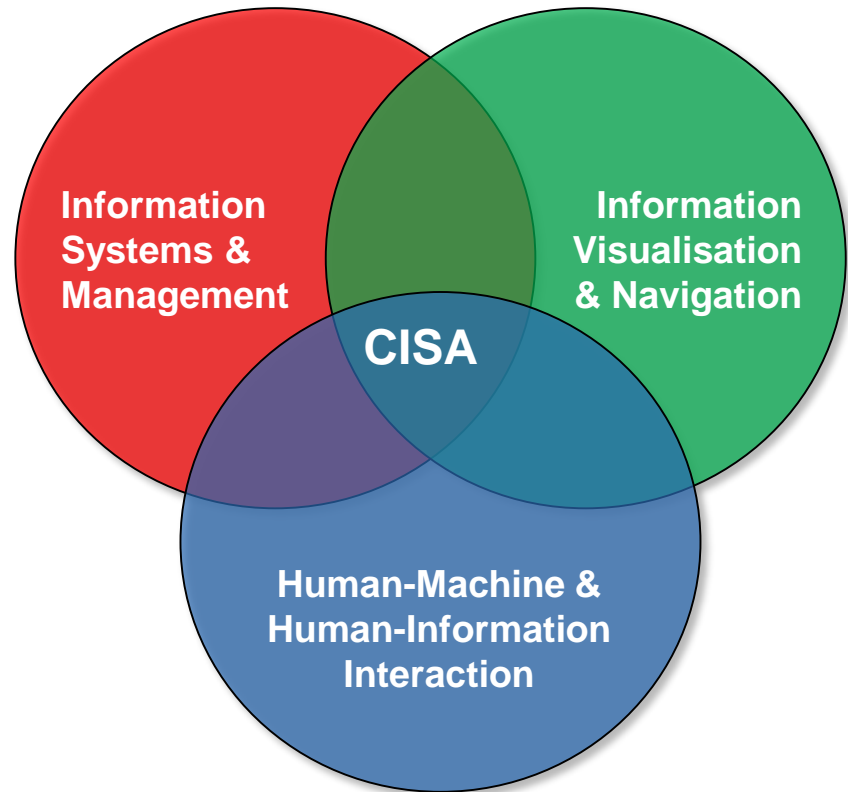
Cristian Vasquez Paulus
Community Semantics,
Structured Data on the Web



Jan Maushagen
Learning Analytics, Adaptive
Persuasive ICT Tools

WiSe WEB & INFORMATION SYSTEMS ENGINEERING

CROSS-MEDIA INFORMATION SPACES AND ARCHITECTURES (**CISA**)





Microsoft HoloLens Demonstration





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The End

Good Luck with the Exam!

