

Human-Centric Computing

Introduction

Lingyun Yu

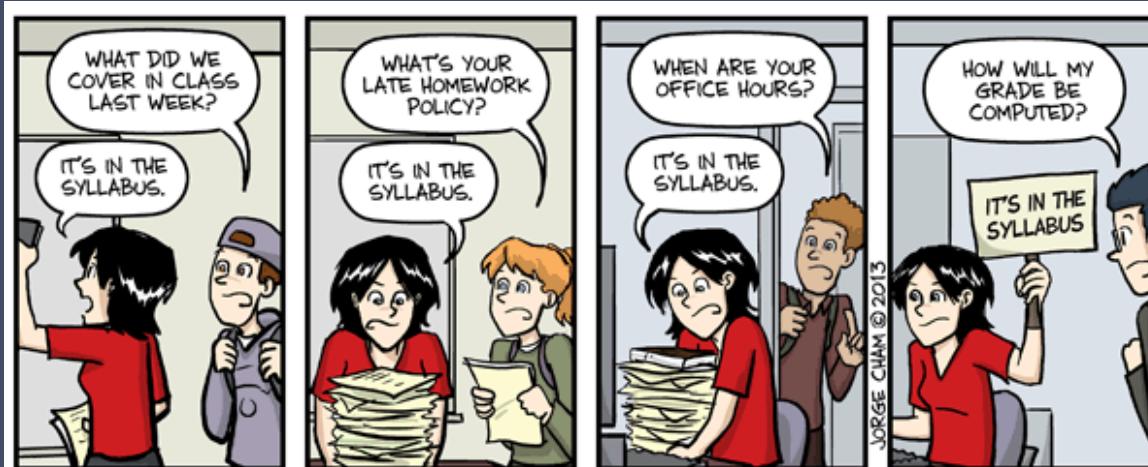
I am...

- Dr. Lingyun Yu
- I come from China , I did my PhD in the Netherlands , then I worked for several years in China , and then I worked again in the Netherlands , before coming back to China , again
- I now live in Suzhou and I have spent the whole COVID-19 special situation here
- My research is on Interactive Visualization and Human-Computer Interaction
- I love teaching this course, because every time I teach it, I learn or re-learn something or get the opportunity to improve how I teach these concepts

Contact

- Office: SD463
- Tel: 1508
- Email: Lingyun.Yu@xjtu.edu.cn
- Office hours
 - SD463, 14:00 – 16:00 Friday
 - by email any time
 - by appointment: email or phone to arrange one
 - drop in for urgent requests (but no guarantees!)

Handbook / Syllabus



IT'S IN THE SYLLABUS

This message brought to you by every instructor that ever lived.

WWW.PHDCOMICS.COM

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INTRODUCTION

Traditional Computer Workplace



Innovative Interactive Systems



Innovative Interactive Systems



© P I X A R

Innovative Interactive Systems



<http://www.rigaut.com/benoit/CERN/badday/>

Innovative Interactive Systems*

* according to Hollywood



from Minority Report, © 2002 Twentieth Century FOX and Dreamworks Pictures

Innovative Interactive Systems ...

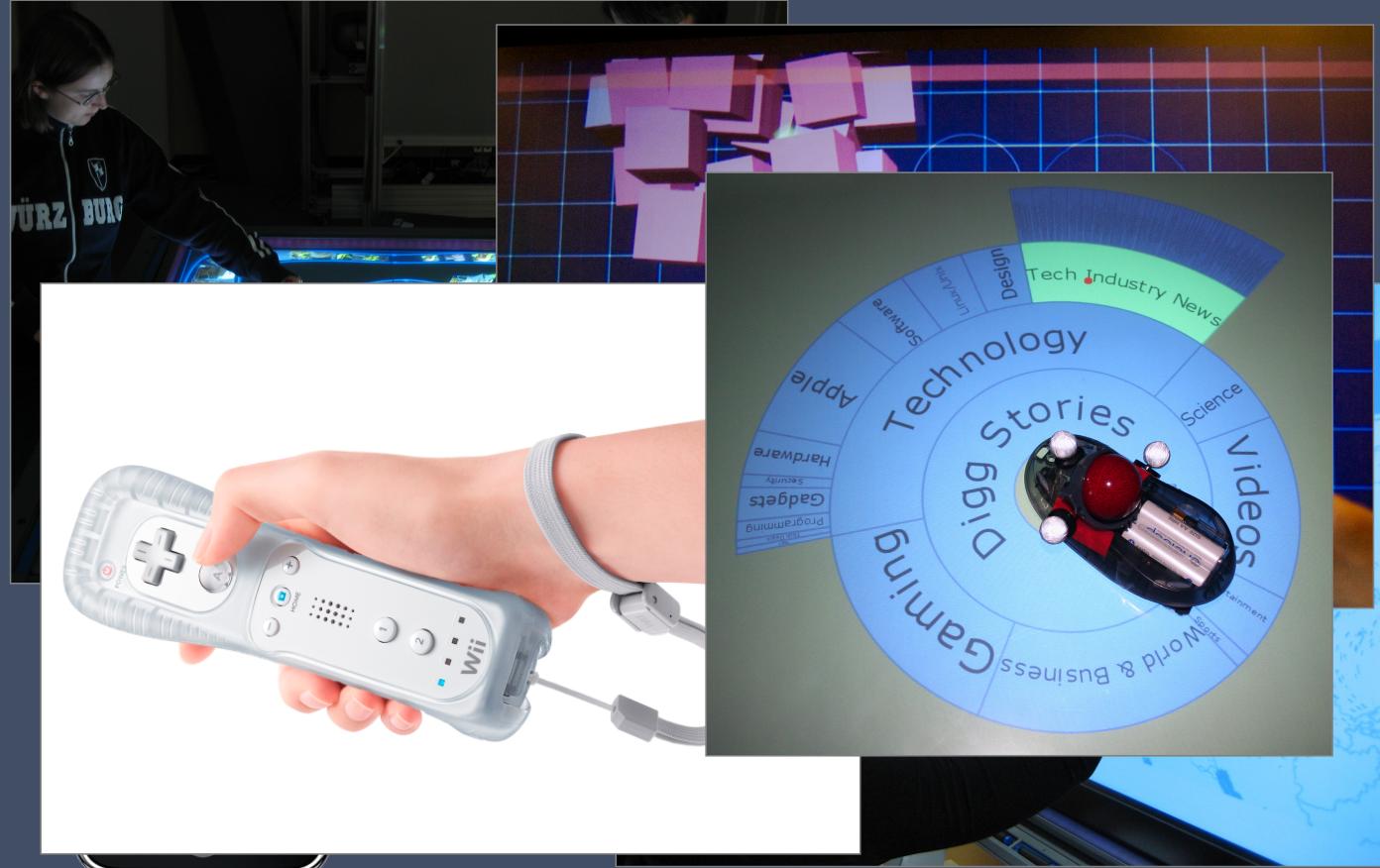
... (maybe) in the future



The Future of Screen Technology
an open innovation concept video

from <http://www.tat.se/>

Innovative Interactive Systems



Human-Centric Computing

Lingyun Yu

Human-Centric Computing: Introduction

Innovative Interactive Systems

“Designing interactive products to support the way people communicate and interact in their everyday and working lives”

–Sharp, Rogers, and Preece (2019)

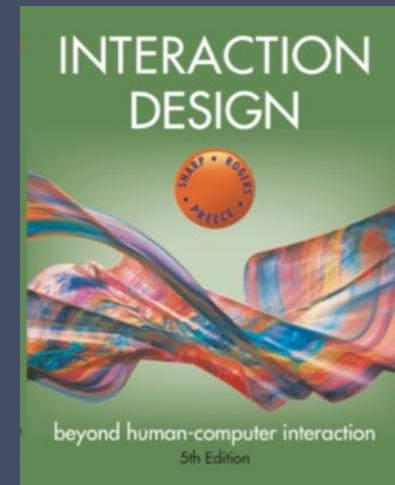
Objectives

- At the end of this course, you will know
 - methods for grounding your design in reality
 - methods for prototyping visual applications
 - methods for evaluating interface quality
 - fundamentals of screen design and representations
 - how to apply guidelines to interface designs
 - how to apply your training in practice and continue your education
 - how to design a GUI interface

MODULE STRUCTURE

Interactive Systems

- lectures:
 - major topics in Human-Centric Design and Computing
 - Room: *Week 1 Online Week 2-6,8-14: SC176*
 - Thursday 11:00 – 13:00
 - slides available one day before each lecture
- recommended readings:
 - “Designing Interactions” by Bill Moggridge (available online at www.designinginteractions.com)
 - “Interaction Design: Beyond Human-Computer Interaction” by Helen Sharp, Yvonne Rogers, and Jenny Preece (www.id-book.com)



Interactive Systems

- Seminar sessions:
 - assignments (two group projects and an individual project)
 - presentations of assignments
 - discussions & further material
 - questions & answers
 - rooms: *Online* and *SC176*
 - time: Friday 11:00-13:00
 - **presence is mandatory**

Time	Topics	Lectures
Week 1	introduction	introduction, motivation, design life cycle
Week 2	Understanding users and their tasks	Task-centered design and Goal-centered design
Week 3	Designing with the user	User-Centered design, participatory design and prototyping
Week 4		design principles & heuristics for interaction
Week 5	Graphical Design	Visualization
Week 6		Visualization
Week 8		Interaction in Visualization
Week 9	GUI realization	JAVA Swing
Week 10		JAVA Swing
Week 11	Evaluation	heuristic evaluation, usability evaluation, qualitative method
Week 12		Quantitative method
Week 13		Tableau
Week 14		Review

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MODULE ASSESSMENT

How you will be evaluated

- grading and rules:
 - presence mandatory lectures and lab sessions
 - **10% from group project** with an interface/interaction technique design
 - **15% from group project** with an evaluation task
 - **15% from individual project** with a GUI interface design
 - **60% from the final exam**

Group project – an interface/interaction technique design (10%)

- Group
 - work in group of 5 students
- Task
 - Design an interactive system/interaction technique
- process
 - Identify team and choose a topic
 - State of the Art
 - Identify the limitations of the existing work
 - Propose your idea of enhancement, tasks, users, environment, social context etc.
 - Design the interface/interaction technique (prototyping, walkthrough evaluation, design principles, visualization and interaction)
 - Make the evaluation plan

Group project – an interface/interaction technique design (10%)

- Presentations

- ***Presentation one*** (State of the Art, Identify the limitations of the existing work, Propose your idea of enhancement, Describe tasks, users, environment, social context etc.)
- ***Presentation two*** (Prototyping)
- ***Presentation three*** (Design principles)
- ***Presentation four*** (Visualization and interaction)
- ***Presentation five*** (Evaluation plan)
- ***Final presentation (the best group projects only)***

Each student takes one presentation
10 mins presentation + 5 mins Q/A

Group project – an evaluation task (15%)

- Group
 - work in group of 5 students
- Task
 - a small usability study of an existing system
- process
 - Find an existing system, App or interaction technique
 - Identify the limitations of the existing work
- Submission
 - *A report*

Individual projects (15%)

- Task
 - Design and implement a GUI interface with JAVA Swing
- Submission
 - *A 5-minute demo*
 - *the final application and source code*
 - *a report*

Final Exam

- will cover all the learning outcomes

Time	Lectures	Timeline
Week 1	introduction, motivation, design life cycle	
Week 2	Task-centered design and Goal-centered design	
Week 3	User-Centered design, participatory design and prototyping	Presentation 1: Motivation and related work
Week 4	design principles & heuristics for interaction	
Week 5	Visualization	Presentation 2: Prototyping
Week 6	Visualization	
Deadline for the evaluation work		
Week 8	Interaction in Visualization	Presentation 3: Design principles
Week 9	JAVA Swing	
Week 10	JAVA Swing	Presentation 4: Interaction and Interface Design
Week 11	heuristic evaluation, usability evaluation, qualitative method	
Week 12	Quantitative method	Presentation 5: Evaluation plan Deadline for the GUI work
Week 13	Tableau	Final presentation
Week 14	Review	

This week

	1	2	3	4	5	6	7	Week 1: Teaching starts
March	8	9	10	11	12	13	14	Week 2; Exam Board
	15	16	17	18	19	20	21	Week 3; Exam Board
	22	23	24	25	26	27	28	Week 4
April	29	30	31	1	2	3	4	Week 5; Qingming Festival
	5	6	7	8	9	10	11	Week 6; University closed day
	12	13	14	15	16	17	18	Week 7: Midterm; Learning and Teaching
	19	20	21	22	23	24	25	Week 8
May	26	27	28	29	30	1	2	Week 9; Labour day
	3	4	5	6	7	8	9	Week 10; University closed day
	10	11	12	13	14	15	16	Week 11
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June	31	1	2	3	4	5	6	Week 14
	7	8	9	10	11	12	13	Examination days;
	14	15	16	17	18	19	20	Dragon Boat Day; Marking
	21	22	23	24	25	26	27	Assessment moderation

The first presentation...

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Final presentation

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Human-Centric Computing

- questions?