Human Computer Interaction CS449 – CS549

Week-1

Course Logistics
Introduction: What is HCI and why is it important?

KÜRŞAT ÇAĞILTAY

Coaches

- Head coach: Kürşat Çağıltay
  - FENS 2073;
  - kursat.cagiltay@sabanciuniv.edu;
  - Office hours: By email/appointment or walk-in

- Assistant coach: Vahid Khalili Param,
  - vahid.khalili@sabanciuniv.edu
  - Office hours: Wed 10:00-12:00

About me

- METU/ODTÜ : Mathematics - Computer Engineering,
- Indiana University, USA. Double Ph.D.
  - Instructional Technology & Cognitive Science

- I have been teaching/researching HCI in the last 20+ years

Research Focus: Human Computer Interaction

- Eyetracking & Multimedia Learning
- Technology Enhanced Learning
- Computer Games/Simulations
- Virtual/Augmented/Mixed Reality
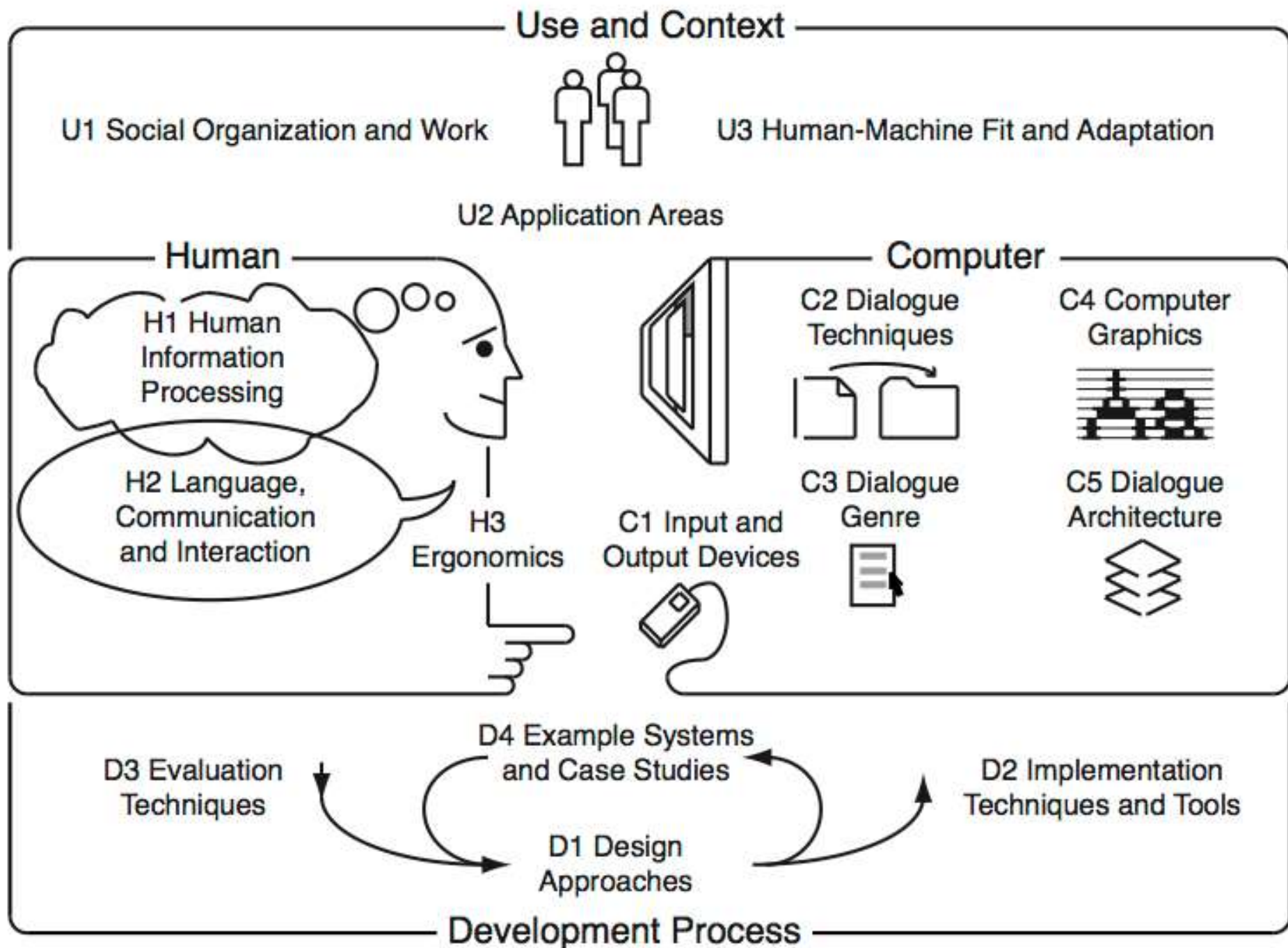- Interactive Wearable Technologies/Tangible Objects (Toys)

Aim of the Course

- To provide a sound background to the discipline of HCI

- Examining and applying HCI research to the design and evaluation of interactive systems

- Gaining transdisciplinary approach with, <u>technical, psychological</u> and <u>social</u> focus

- Paradigm shift towards human centered computing

Key Objectives

- Develop a <u>theoretical</u> and <u>empirical</u> understanding of user-centered design of computer interfaces, and their uses,

- Develop valid and reliable usability evaluation plans for any information technology

- Provide a foundation of understanding about HCI issues in software engineering

- Offer a set of first-hand real-world experiences which augment conceptual understanding of course content.

Use and Context

U1 Social Organization and Work

U3 Human-Machine Fit and Adaptation

U2 Application Areas

Human

H1 Human Information Processing

H2 Language, Communication and Interaction

H3 Ergonomics

Computer

C1 Input and Output Devices

C2 Dialogue Techniques

C3 Dialogue Genre

C4 Computer Graphics

C5 Dialogue Architecture

D3 Evaluation Techniques

D4 Example Systems and Case Studies

D1 Design Approaches

D2 Implementation Techniques and Tools

Development Process

Students' Primary Responsibilities

- Making weekly readings ☺

- Doing and Turning on assignments

- critiquing and analyzing readings, finding related case studies/hands-on experiences, and organizing and participating class discussions.

- in-class and outside of class assignments/exercises to link with concepts covered in class

- Conduct HCI Research

My Role/Responsibilities

- Providing learning sources for students

- Sharing my experiences

- More «Guide on the side», Less «sage on the stage»

- Coaching rather than instructing

- Grading ☹

Course Materials

- Reading package will be used.
- Required and optional readings will be available on SUCOURSE

- If you need an HCI book in Turkish (not required)

WEEKLY PROGRAM – (Tentative)

1. Introduction: What is HCI and why is it important?
2. From interface to interaction: HCI Theories, frameworks
3. What is a good user interface: Guidelines, Styles, and Evidence
4. Usability engineering
5. Beyond usability engineering: Understanding the user (part 1) Human Cognition
6. Beyond usability engineering: Understanding the user (part 2) Perception
7. Evaluation strategies for usable interface design: Heuristic Evaluation and Cognitive Walkthrough
8. Evaluation strategies for usable interface design: User based testing & eye tracking
9. Evaluation strategies for usable interface design: Cognitive Modeling
10. HCI Research Methods: Quantitative and qualitative
11. UI Prototyping & Wireframes, Personas, Use Scenarios, and Storyboards
12. Software engineering methodologies and User-Centered Design
13. Accessibility, Interaction and cutting-edge technologies: XR, BCI, HRI
14. HCI and Ethics in the design of information systems for users

Assignments And Grades (Tentative)

- Assignment-1 Design diary report (with redesign – Axure or Figma) = 7 pts

- Assignment-2 Laws of HCI (Fitt's Law) = 5 pts

- Assignment-3 Heuristics Based Usability testing = 13 pts

- Assignment-4 End User Based Usability testing (Virtual Reality) = 20 pts

- Assignment-5 Cognitive Modeling Assignment = 10 pts (This assignment requires CogTool cognitive modeling software, make sure it works on your own computer: https://www.cogtool.org/)

- Final Project / Term Paper (Group) = 40 pts (5 pts draft paper, 35 points final paper)

- Peer evaluation = 2 pts

- Participation/Attendance (with mini quizzes) = 3 pts

- Bonus (or will be integrated to one of the assignments): Attending to an HCI conference 23-25 November - https://iechci.info/ = 3 points

From Last Year's Students

- CS 449 Term paper

- Will be presented at a conference in November

MagniVR: DESIGN & ANALYSIS OF LOW

VISION ACCESSIBILITY TOOL

FOR VIRTUAL REALITY

*Note: Sub-titles are not captured in Xplore and should not be used

Cem Kaya
Faculty of Engineering and Natural
Sciences: Computer Science and
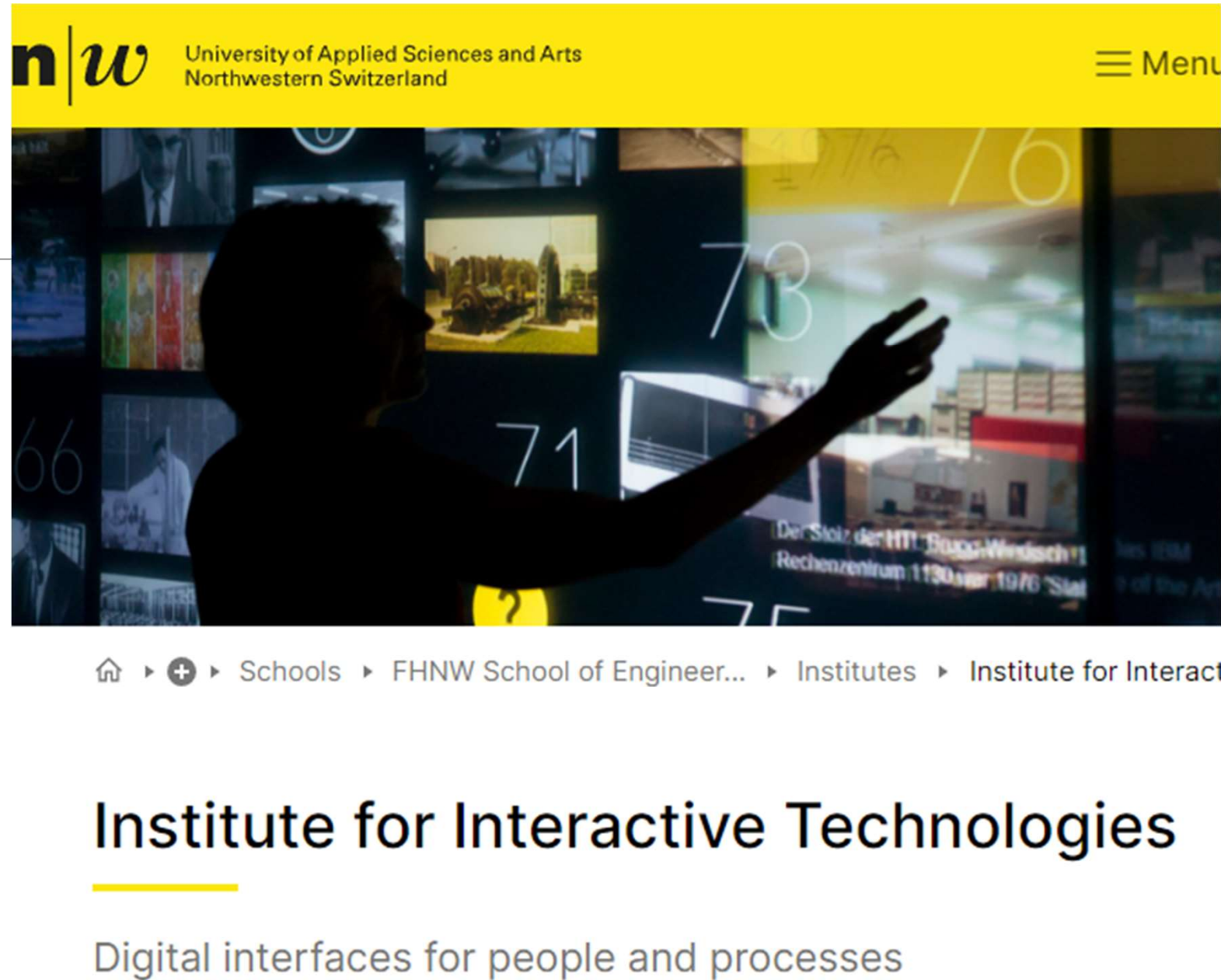Engineering
Sabancı University
İstanbul, Turkey

Baha Mert Ersoy
Faculty of Engineering and Natural
Sciences: Computer Science and
Engineering
Sabancı University
İstanbul, Turkey

Murat Karaca
Faculty of Engineering and Natural
Sciences: Computer Science and
Engineering
Sabancı University
İstanbul, Turkey

- Internship :

Ayşe Sena Acar

FHNW - Switzerland

- Aysun Öğüt

- Copenhagen, Denmark

Aysun Ogut • 1st
MSc Student
2mo • 🌐

After waiting this moment for months, I have finally presented my very first paper in HCII2023! Being one of the highly attended sessions at the conference was invaluable.

I was also entitled to receive TÜBİTAK BİDEB support for my presentation.

HCI International 2023 Conference (HCII2023)

HIGHLY ATTENDED SESSION

Aysun Ogut
"S284: Understanding User Perceptions and Behaviors in Privacy and Security"

Session with big attendance!
Thursday July 27, 2023 / 04:00 PM - 06:00 PM

And Some Rumors About It ☺

- There is no exam, so it is a «kebap ders» : Yes or No
- referans koymayinca 10 puan kirabiliyo : Yes or No
- derste 2005'den kalma program kullandiriyor : Yes
- "HCI almayin kolay duran amele işi dersi" : No comment ☺
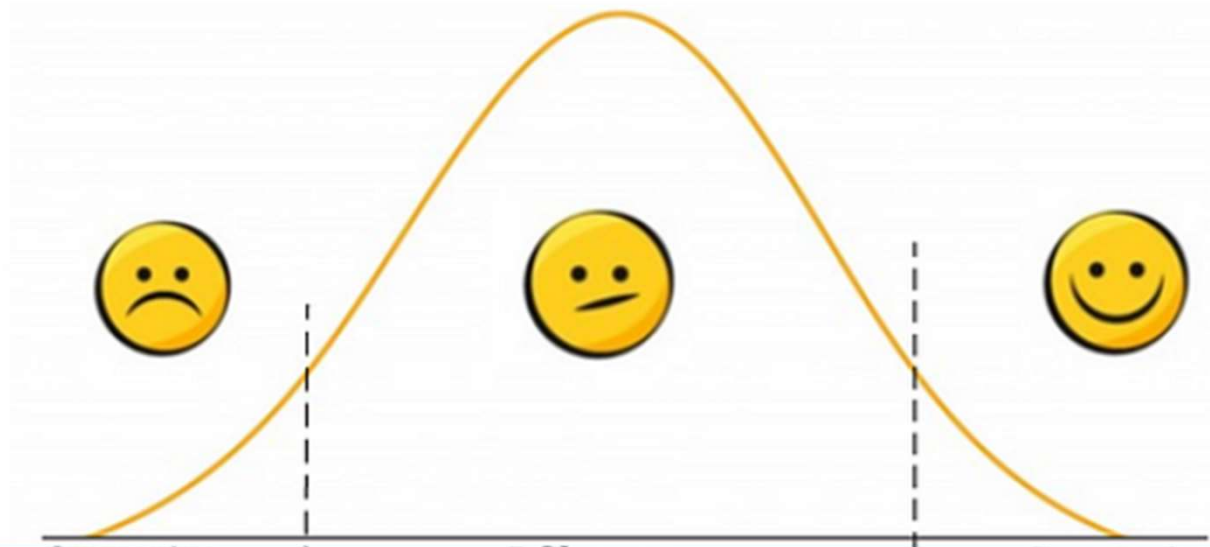
Term Papers for Conferences
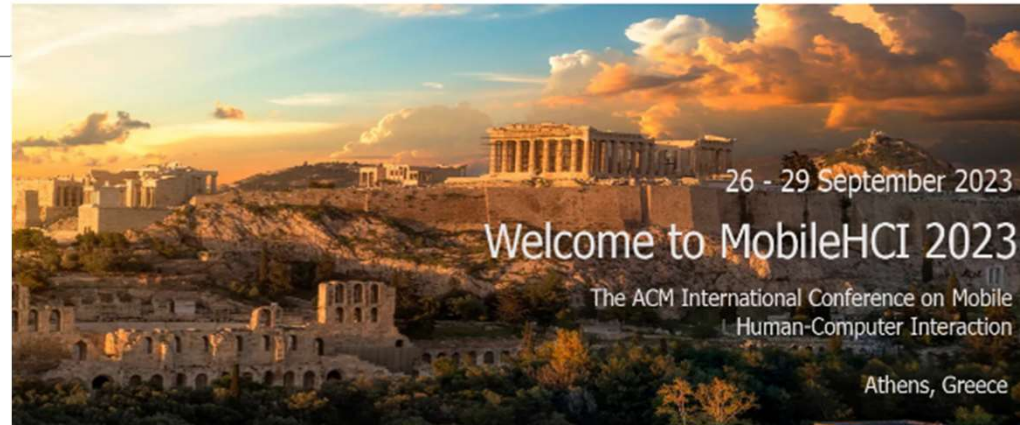
Guest Speakers

CAGLAR YILDIRIM

HCI & MIXED REALITY | C.YILDIRIM@NORTHEASTERN.EDU | CAGLARY@MIT.EDU

I am a faculty member in the Khoury College of Computer Sciences a
Artificial Intelligence Laboratory at Massachusetts Institute of Techn
raise awareness on racial bias and discrimination. I received my PhD
a faculty member in the Department of Computer Science at State U
program.

My current research is in the areas of HCI and immersive environme
human interactions with virtual/augmented/mixed reality environme
- designing and evaluating 3D interaction techniques for immers
- studying human factors issues (e.g., cybersickness) in immersiv
- and using machine learning techniques to quantify immersive

ABOUT

PUBLICATIONS

TEACHING

NOMOPHOBIA

Mustafa Dalci · 1st

Founder / UX Consultant at Userspots, Co-Founder at IoX Digital

Talks about #ux, #uxdesign, and #enterpreneurship

Istanbul, Istanbul, Turkey · **Contact info**

(maybe one UX expert from Google)

Who watched it?

Readings for this week

- **week-1-1** Introduction to HCI
  - Dix et.al. (2004). Human Computer Interaction. Introduction. pp. 1-8

- **Week-1-2** Evolution of HCI (skim through)
  - Grudin, J. (2012). Introduction: A Moving Target: The Evolution of Human−Computer Interaction

- **week-1-3** HCI Research Themes and Trends of past 60 Years (read only Discussion section)
  - Fatih Gurcan, Nergiz Ercil Cagiltay & Kursat Cagiltay (2021)

- **week-1-4** Shneiderman - Ch-1 usability of interactive systems (skim through)
  - Shneiderman, B. et.al. (2016). Usability of interactive systems. pp. 25-54.

- **Optional**

- (In Turkish) Dolmuşun Kapısı by Aziz Nesin. A story in İstanbul'un Halleri - Read for fun

- (In Turkish) Read for fun-2 Bilim-Teknik-elektronik_beyin_insan_konusmasi-1968-Ekim

Friday's Class

- History of the field. Reading #2

- Where do HCI go? Reading #3

- HCI basics. Reading #1&4