



02JSKov

Human Computer Interaction

Course introduction

Fulvio Corno, Luigi De Russis

Academic Year 2019/2020



POLITECNICO
DI TORINO



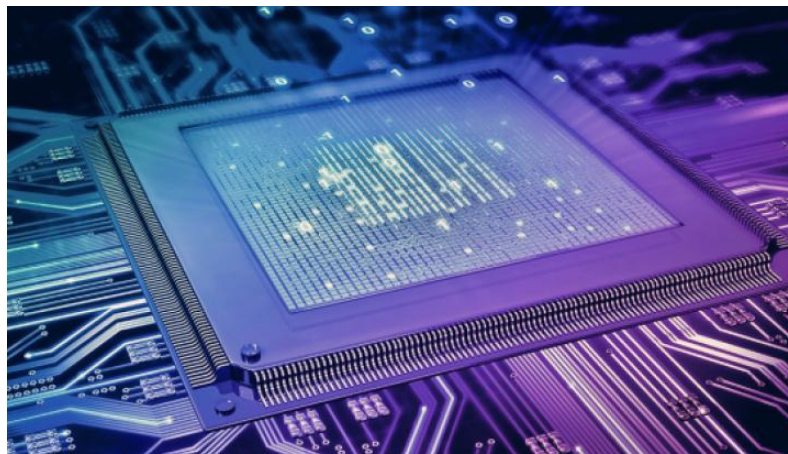
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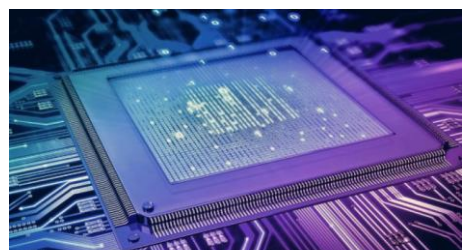
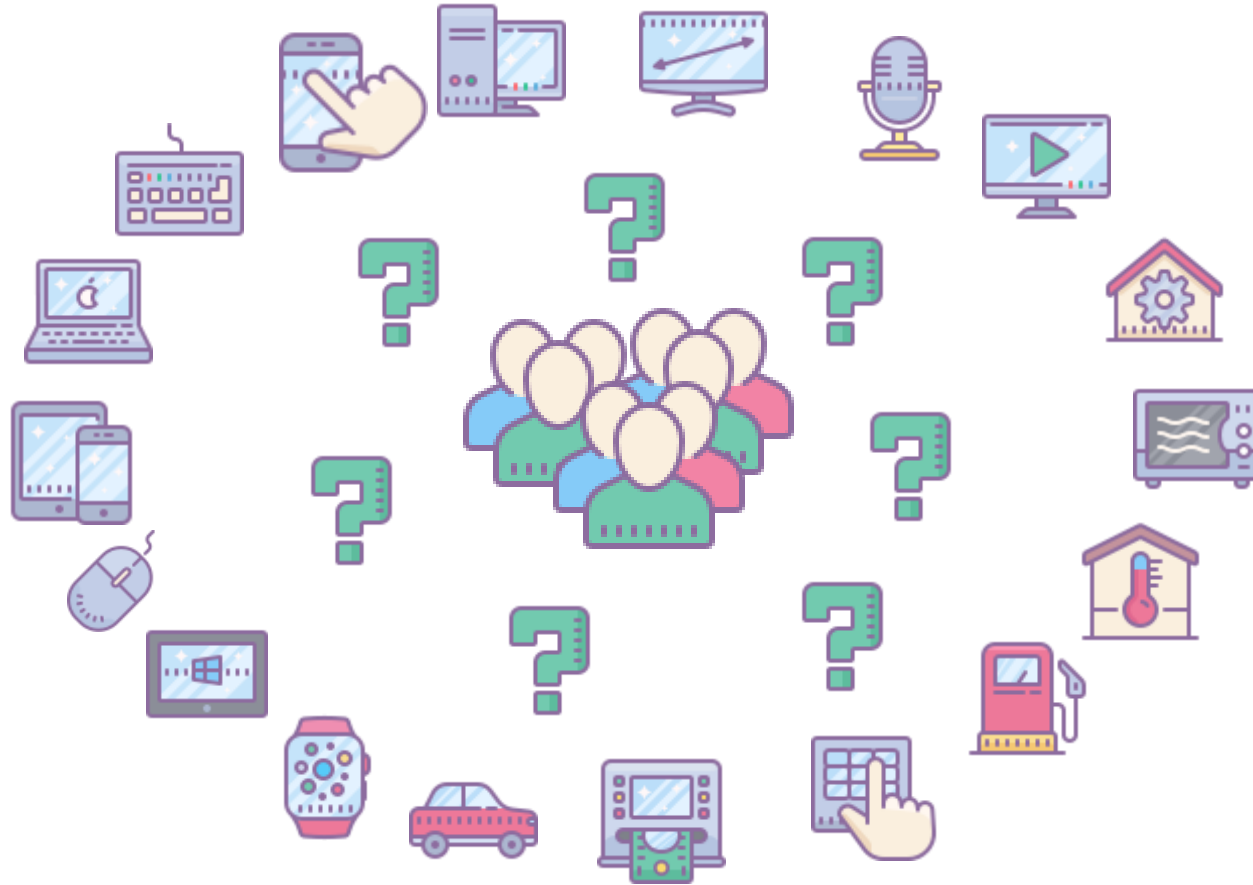
Motivation

Why should a Computer Engineer care about HCI?

Motivation



Motivation



Challenges

- How to design the user experience when interacting with modern applications, devices, environments?
- How to exploit the novel interaction methods provided by touch, voice, natural interaction, gestures, ...?
- How to ensure that people use such interfaces and systems with “joy” rather than “frustration”?

- Deep down inside every software developer, there's a budding graphic designer waiting to get out. And if you let that happen, you're in trouble. Or at least your users will be, anyway...

Jeff Atwood, Nov 2006

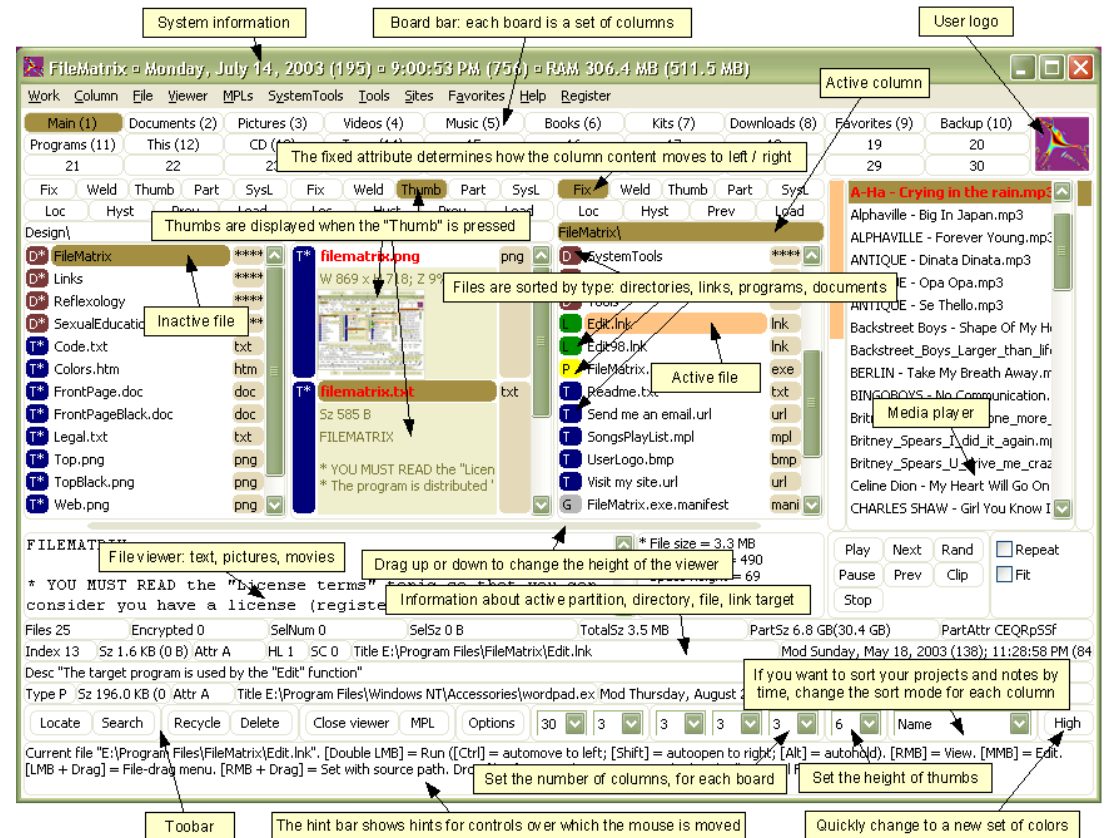
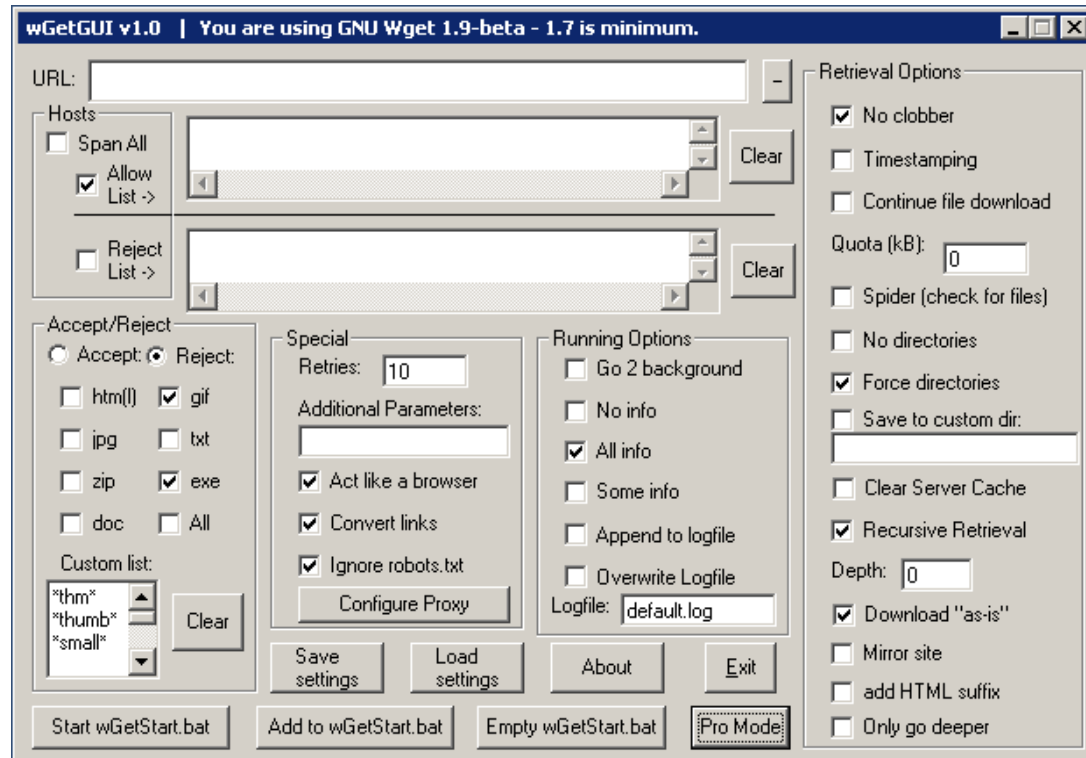
<https://blog.codinghorror.com/this-is-what-happens-when-you-let-developers-create-ui/>

- The two hardest problems in computer science are: (i) people, (ii), convincing computer scientists that the hardest problem in computer science is people, and, (iii) off by one errors.

Prof. Jeffrey P. Bigham, 2018

<http://www.cs.cmu.edu/~jbigham/>

Developers' attitude



https://thedailywtf.com/articles/Classic_WTF_-_Enter_the_Matrix

Course contents

Objectives, topics, outcomes

Course Objectives

Learn:

- Key concepts related to HCI
 - User Experience, Usability
 - Design Methods
 - Evaluation Techniques
- User Centered Design Process
- New “modern” interaction methods
- Not only web & mobile

Apply:

- Design and development of a project
 - Eliciting needs
 - Following the process
 - Developing a result
- Analysis and evaluation of interfaces

Course Contents

Introduction to Human-Computer Interaction (10%)

History, the human, the computer, vision of the future

Building interactive applications with a human-centered process (35%)

Main tasks and methods to design, develop, and evaluate an interactive application

Needfinding strategies, low- and high-fidelity prototypes, mental models and visual design, heuristic evaluation, and basic concepts and methods for controlled experiments

Application & Projects (30%)

Practical part on a specific application domain and interaction technology

Web applications

“Beyond WIMP” paradigms (25%)

Tangible interaction, wearables, voice user interfaces, gestures, eye tracking, and interaction with IoT systems, ...

Contemporary examples and development tools

Thematic seminars on emerging topics and case studies

Methodology

Lectures, labs, support material, exam

Methodology

- Learning method
 - project-based → students learn by doing a project
 - problem-based → the project work starts from elicited and real users' needs
- Projects developed **during** the semester, with intermediate milestones and deliverables
- Contemporary communications and project development tools and technologies
 - e.g., Slack, Git and GitHub, ...

Schedule

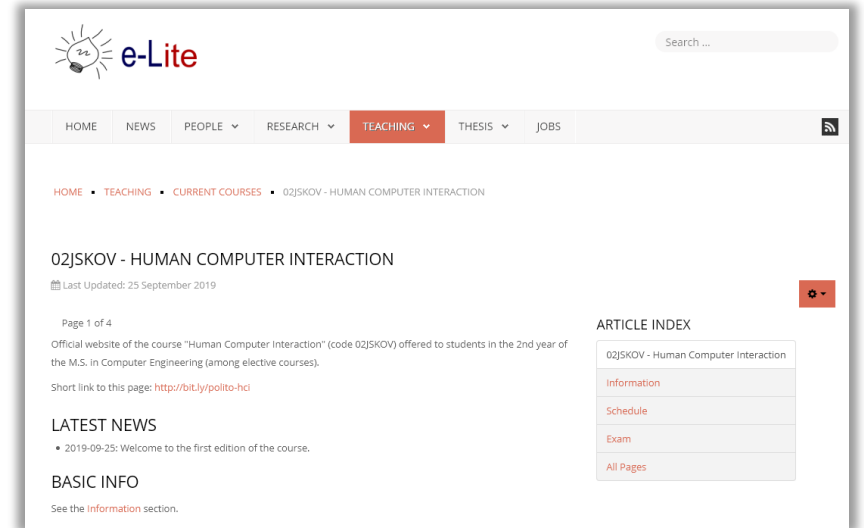
Starting
October 10

	Mon	Tue	Wed	Thu	Fri
08:30-10:00					
10:00-11:30				Lab (group 1) LABINF	
11:30-13:00			Lecture Room 101	Lab (group 2) LABINF - TBD	
13:00-14:30					
14:30-16:00					
16:00-17:30					
17:30-19:00		Lecture Room 101			

Depends on
final student
count

Learning material

- Course website - <http://bit.ly/polito-hci>
 - Slides
 - Full schedule
 - Deliverable templates
 - Supplementary material
- Video lectures
 - YouTube - https://www.youtube.com/playlist?list=PLs7DWGc_wmwRB2ttWJXBHBW4OU5B_2NTp
 - Portale della Didattica
- GitHub - <https://github.com/polito-hci-2019>
 - Examples, exercises



Collaboration and communication

- Projects on GitHub:

<https://github.com/polito-hci-2019>



- Communication with teachers and among groups via Slack App

<https://polito-hci-2019.slack.com>

(you will be invited)





Internal Communication

- All contacts with teachers **must** take place on Slack
 - e-mail messages will **not** be considered
- The #general channel is reserved to official communications by the teachers.
- The #discussion channel is for questions, requests, ideas, etc. by any student. Teachers will read and respond.
- The #random channel is for free discussion among students.
- Groups of students may *create private channels* for collaborating on their project

Development



- All development (labs, projects, websites) on GitHub
 - Use it! Really! Continuously!
- Create a GitHub account
 - Choose a nickname that may last forever (don't use the “matricola” number)
 - Register with a @studenti.polito.it address, you may get free private repositories (request on <https://education.github.com>)
- Per-project repositories will be created in polito-hci-2019
 - If you need further repositories, please ask
- Always commit your intermediate work

Study material

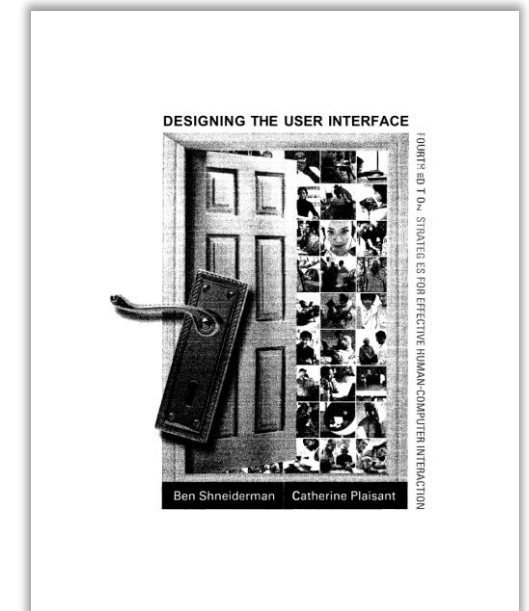
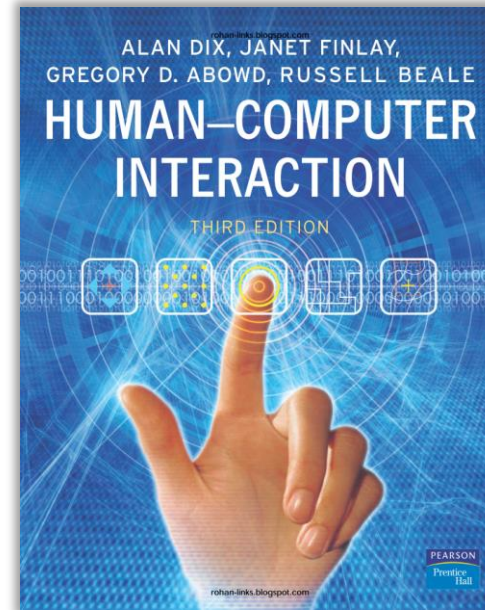
- No suitable textbook for the whole course

- Teachers' slides
- Required readings
- Lecture videos

- Suggested books for some of the topics
- Suggested papers
- On-line technical documents

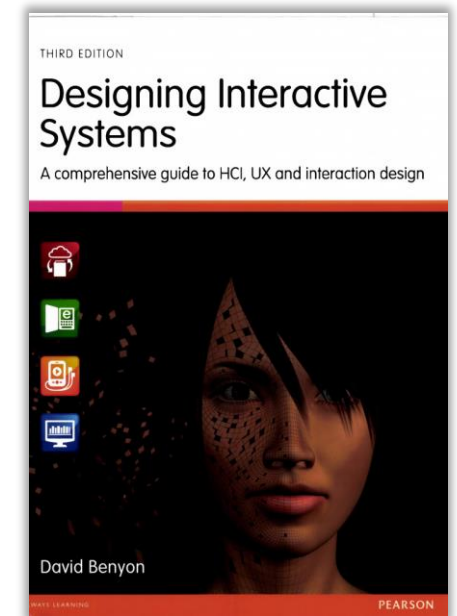
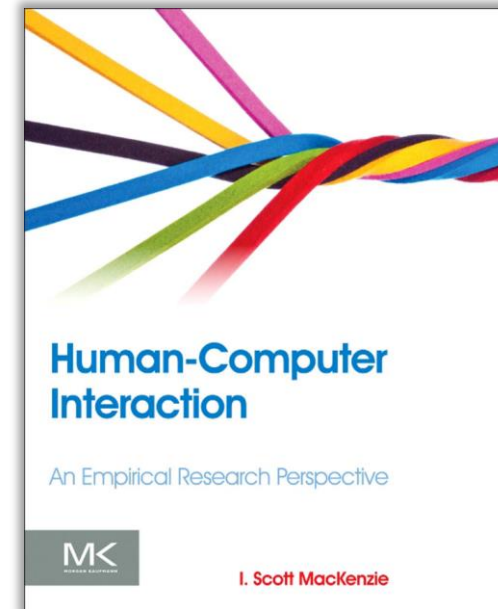
Suggested books

- Alan Dix, Janet Finlay, Gregory Abowd, Russell Beale: Human Computer Interaction, 3rd Edition, Prentice Hall, 2004, ISBN 0-13-046109-1
- Shneiderman, Plaisant, Cohen, Jacobs, Elmqvist & Diakopoulos: Designing the User Interface: Strategies for Effective Human-Computer Interaction, 6th Edition, Pearson, 2016, 013438038X / 9780134380384



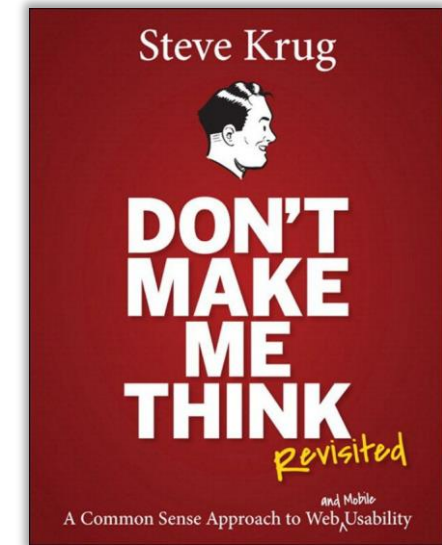
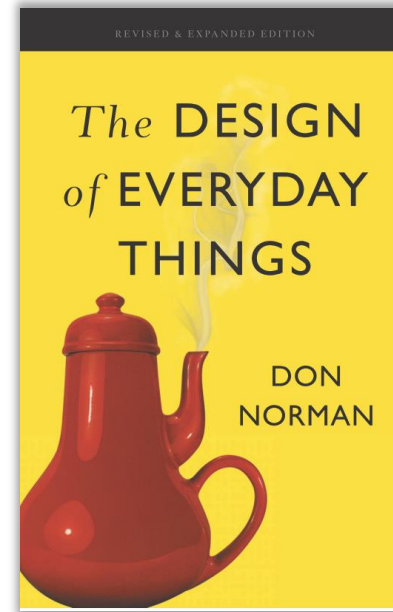
Suggested books

- I. Scott MacKenzie: Human-Computer Interaction – An Empirical Research Perspective, Morgan Kaufmann, 2013, 978-0-12-405865-1
- David Benyon: Designing Interactive Systems, Pearson, 2014, 978-1447920113



Suggested books

- D. Norman, *The Design of Everyday Things: Revised and Expanded Edition*, Hachette UK, 2013, ISBN 0465072992, 9780465072996
- S. Krug, *Don't Make Me Think: A Common Sense Approach to Web and Mobile Usability - revisited*, Pearson Education, 2014, ISBN 0321648781, 9780321648785



The exam

Group projects, written test, exam rules

The exam

- Written test [40%: 13 points, minimum 7]
 - Design methods, design processes, design and analysis instruments, ...
 - No coding
- Evaluation of the projects (by group) [60%: 20 points]
 - Deliverables
 - Source code
- Both parts must be passed **in the same academic year**
 - In any order

Contacts



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