



02JSKxx

Human Computer Interaction

Course Introduction

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Academic Year 2020/2021



POLITECNICO
DI TORINO



Summary

- Motivation
- Course Contents
- Methodology
- The Exam
- Contacts

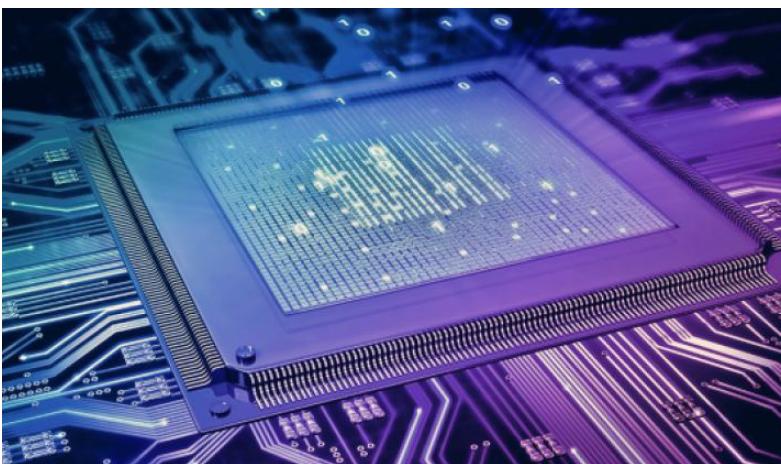
Motivation

Why should a Computer Engineer care about HCI?

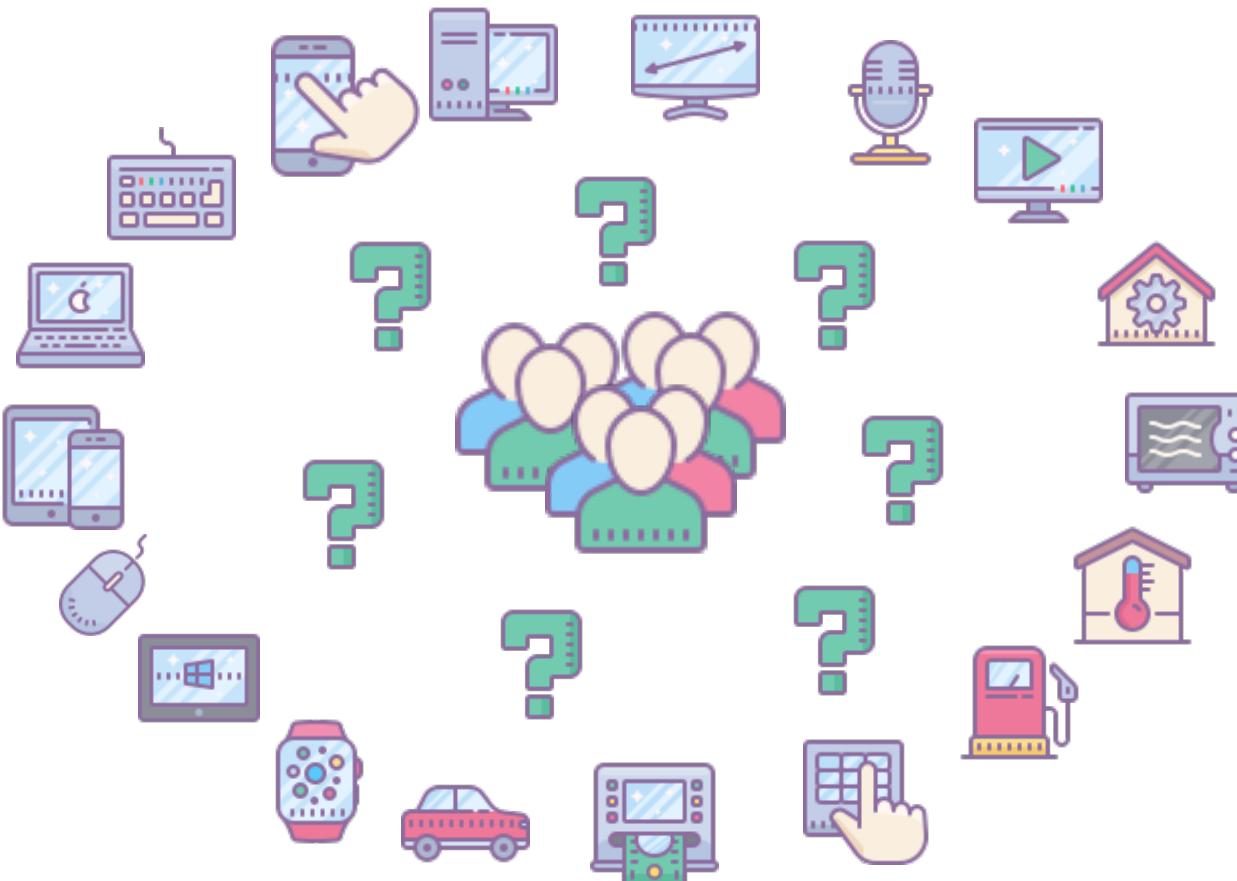
Motivation



```
if (c < b) { return a.split(" "); } $("#unique").  
val() (or a = array_from_string($("#fin").  
val()), c = use_unique(array_from_  
string($("#fin").val()))); if (c < 2 * b - 1) { return  
a.map((e, i) => e + " " + a[i] + " "); } for (let b = 0; b < c; b++) {  
let a = array_from_string($("#User").  
val()); let c = use_unique(a);  
let d = a.map((e, i) => e + " " + c[i]);  
d.push(c[c.length - 1]);  
a = d; } $(":User").val(a);  
return a;
```



Motivation



Challenges

- How to design the user experience when interacting with modern applications, devices, and 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, 2006

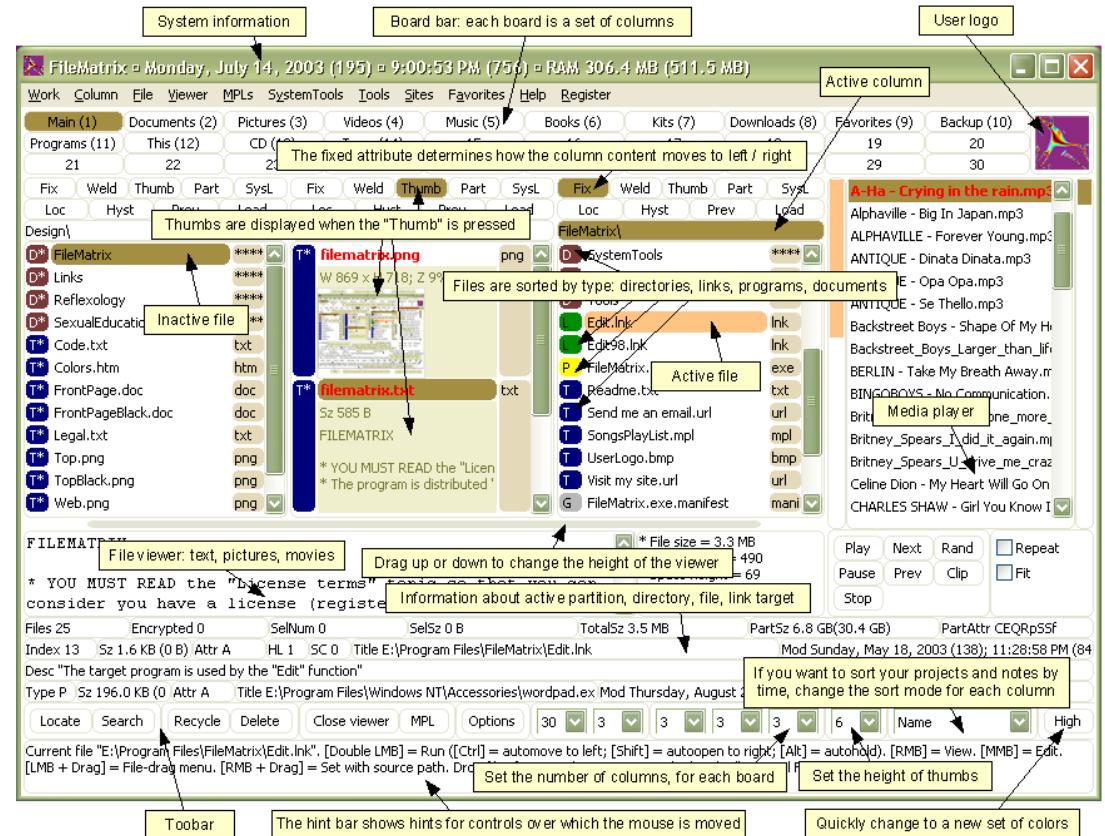
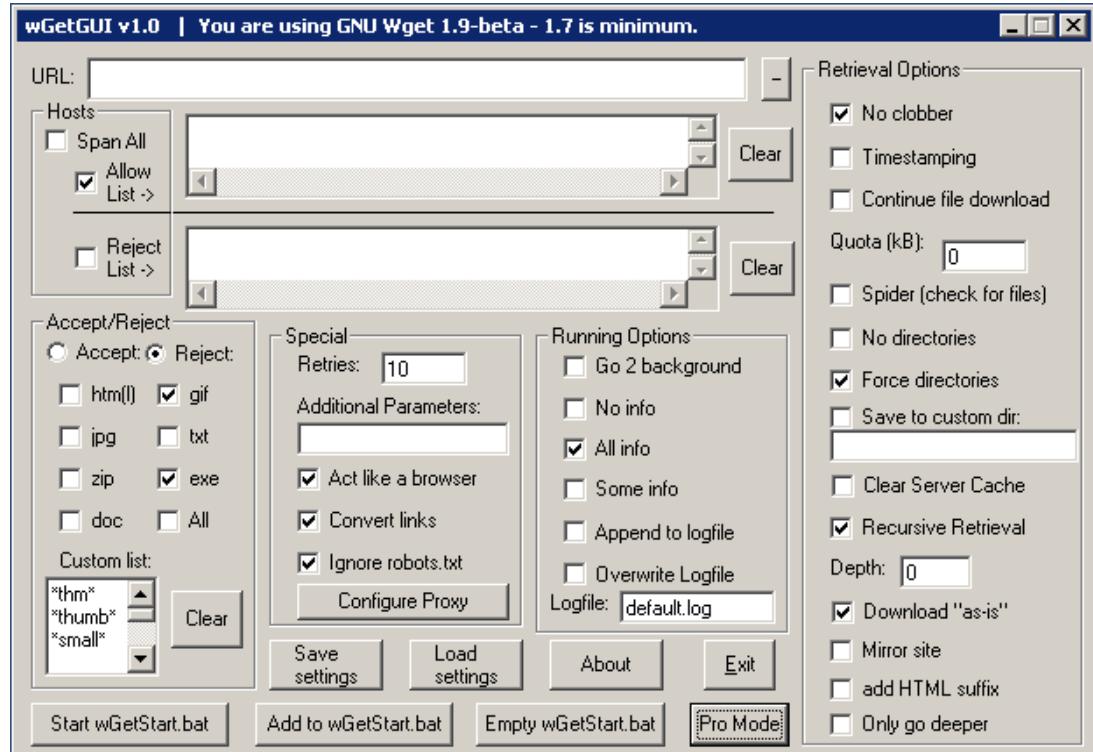
<https://blog.codinghorror.com/this-is-what-happens-when-you-let-developers-create-ui/>

- 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
- Human-Centered Design Process
- “Modern” interaction methods
- Not only web & mobile

Apply

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

Course Contents

Introduction to Human-Computer Interaction (10%)	Definitions, 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, interaction with AI/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 8

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

Learning Material

- Course website - <http://bit.ly/polito-hci>
 - Slides
 - Full schedule
 - Deliverable templates and deadlines
 - Supplementary material
- Video lectures
 - YouTube - https://www.youtube.com/playlist?list=PLs7DWGc_wmwQ7ipQNDCLOhob2l9PpscD
 - Portale della Didattica
- GitHub - <https://github.com/polito-hci-2020>
 - Examples, exercises, group work

The screenshot shows the homepage of the e-Lite website for the course 02JSKOV - HUMAN COMPUTER INTERACTION. The header features a lightbulb icon and the text 'e-Lite'. The navigation bar includes links for HOME, NEWS, PEOPLE, RESEARCH, TEACHING (which is highlighted in red), THESIS, JOBS, and a search bar. Below the navigation, a breadcrumb trail shows HOME > TEACHING > CURRENT COURSES > 02JSKOV - HUMAN COMPUTER INTERACTION. The main content area displays the course title '02JSKOV - HUMAN COMPUTER INTERACTION' and a note that it was last updated on 23 September 2020. It also lists 'LATEST NEWS' (with one item about the 2020 edition) and 'BASIC INFO' (with a link to the 'Information' section). A sidebar on the right is titled 'ARTICLE INDEX' and contains a table of contents with links to '02JSKOV - Human Computer Interaction', 'Information', 'Schedule', 'Development Resources', 'Exam', and 'All Pages'.



Collaboration and Communication

- Projects on GitHub

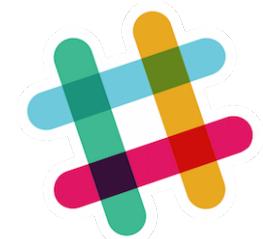
<https://github.com/polito-hci-2020>



- Communication with teachers and among groups via Slack

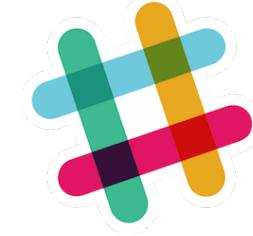
<https://politohci20.slack.com>

(link to join in the News on the Portale della Didattica)



- Office Hours, every Monday, 16:00-17:00

<https://us02web.zoom.us/j/82170392211?pwd=aHRtMEcoMFVUZU9JV2tvLzV5coduZz09>



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



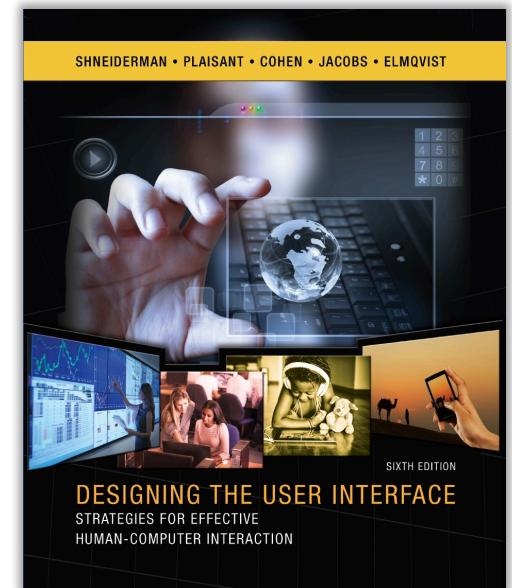
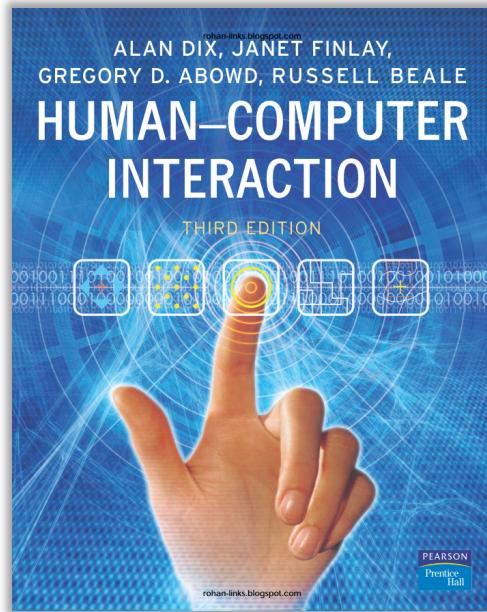
- All development (labs, projects, ...) on GitHub
 - Use it! Really! Continuously!
- Create a GitHub account
 - Choose a nickname that may last forever (don't use the “matricola” number)
 - Register with a @studenti.polito.it address, you may get free private repositories (more at <https://education.github.com>)
- Per-project repositories will be created in the polito-hci-2020 org
 - if you need further repositories, please ask
- Always commit your intermediate work

Study material

- No suitable textbook for the whole course
- Teachers' slides
- Lecture videos
- Suggested books for some of the topics
- Suggested papers
- On-line technical documents

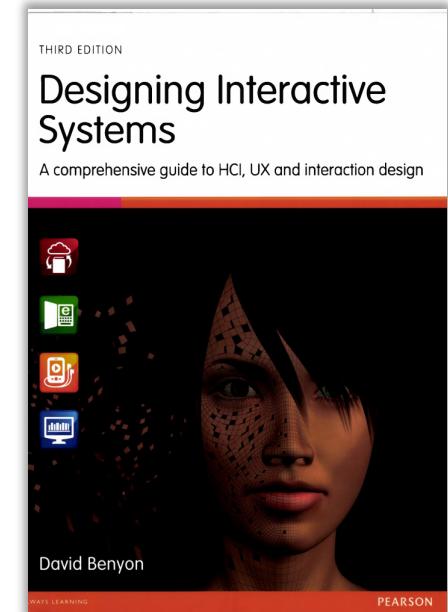
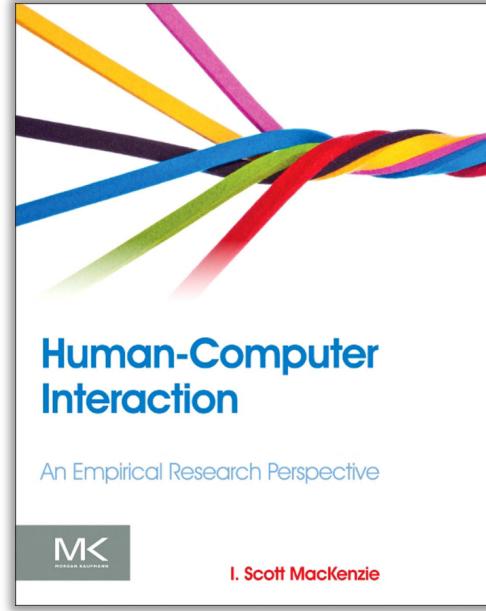
Suggested Books

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



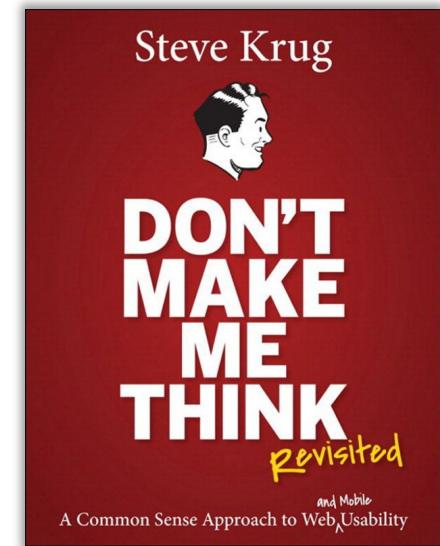
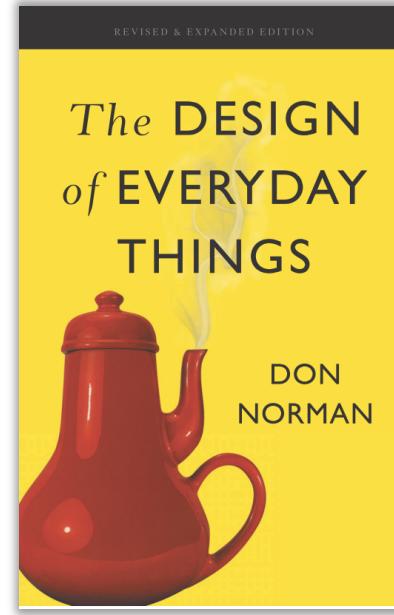
Suggested Books

- I. Scott MacKenzie, "Human-Computer Interaction: An Empirical Research Perspective", Morgan Kaufmann, 2013, ISBN 978-0-12-405865-1
- David Benyon, "Designing Interactive Systems", 3rd edition, Pearson, 2014, ISBN 978-1447920113



Suggested Books

- Don 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
 - Four open questions, 1 hour
 - Sample/past exams on the course website (under "Exams")
- Evaluation of the projects (in group) [60%: 20 points]
 - Deliverables
 - Prototype (source) code
- Both parts must be passed **in the same academic year**
 - In any order

Contacts



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