02JSKxx

Human Computer Interaction

Course Introduction

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Academic Year 2020/2021

Summary

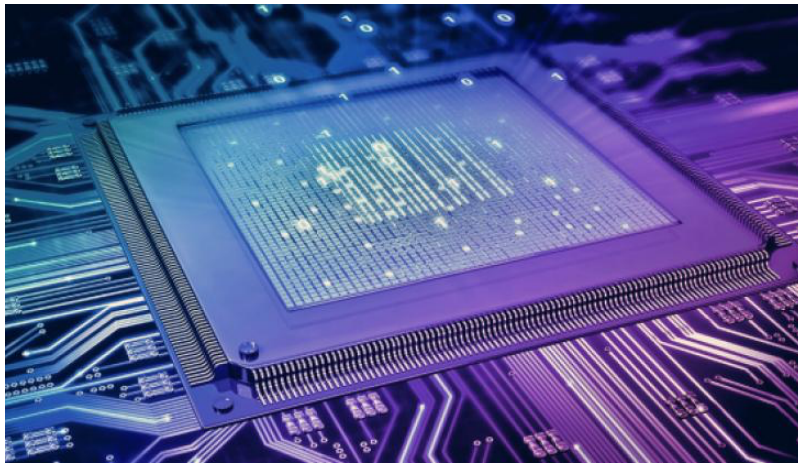
- Motivation
- Course Contents
- Methodology
- The Exam
- Contacts

Motivation

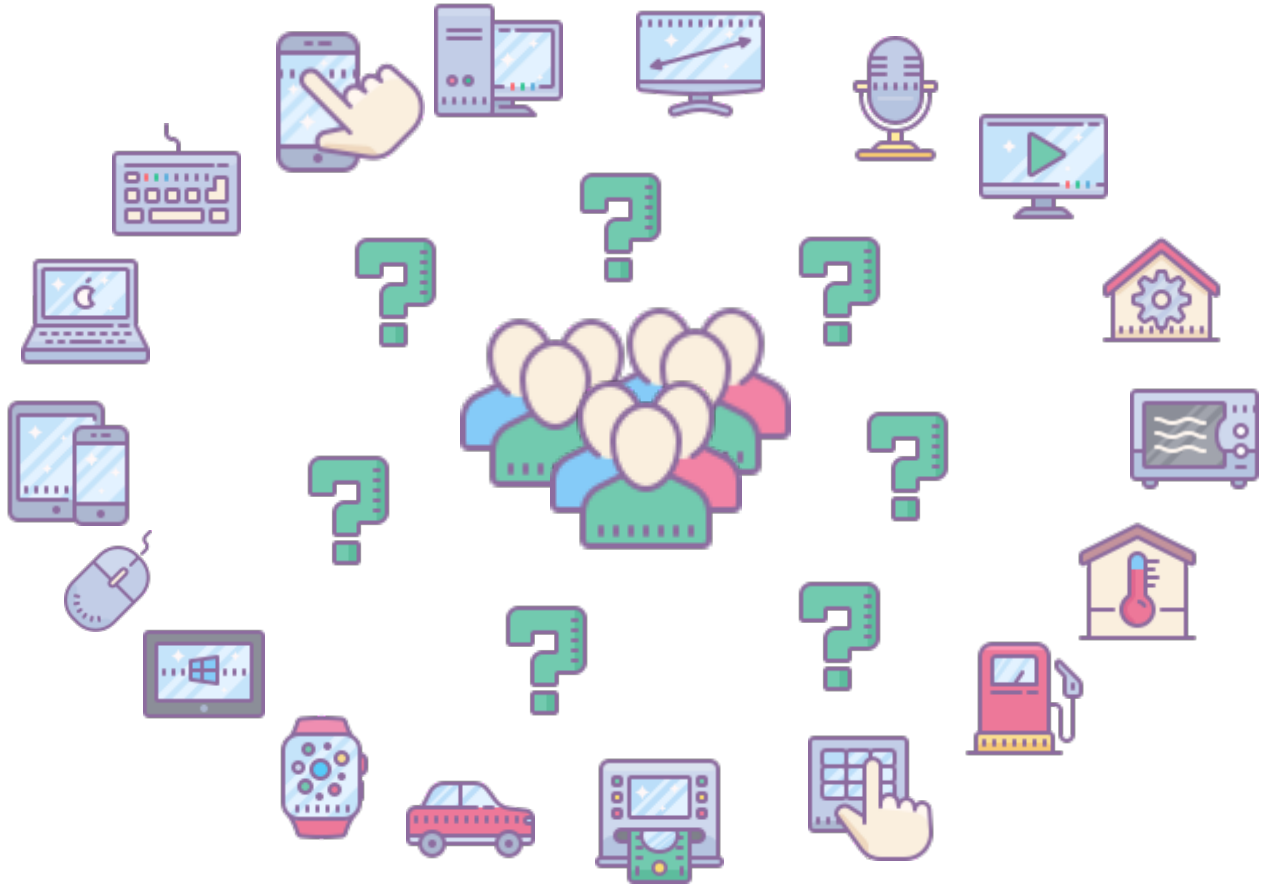
Why should a Computer Engineer care about HCI?

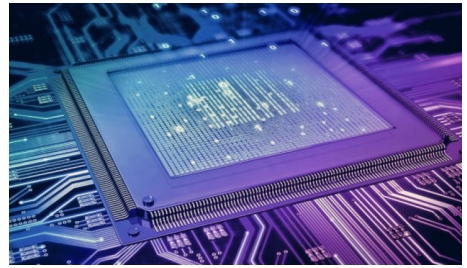
Motivation


return a.split(" "); } $("#unique").
array_from_string($("#fin").
use_unique(array_from_
if (c < 2 * b - 1) {
this.trigger("click");
a[b] && " " != a[b] ||
logged").val(); c = array_from_
c.length;b++) { -1 != a.
for (b = 0;b



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”?

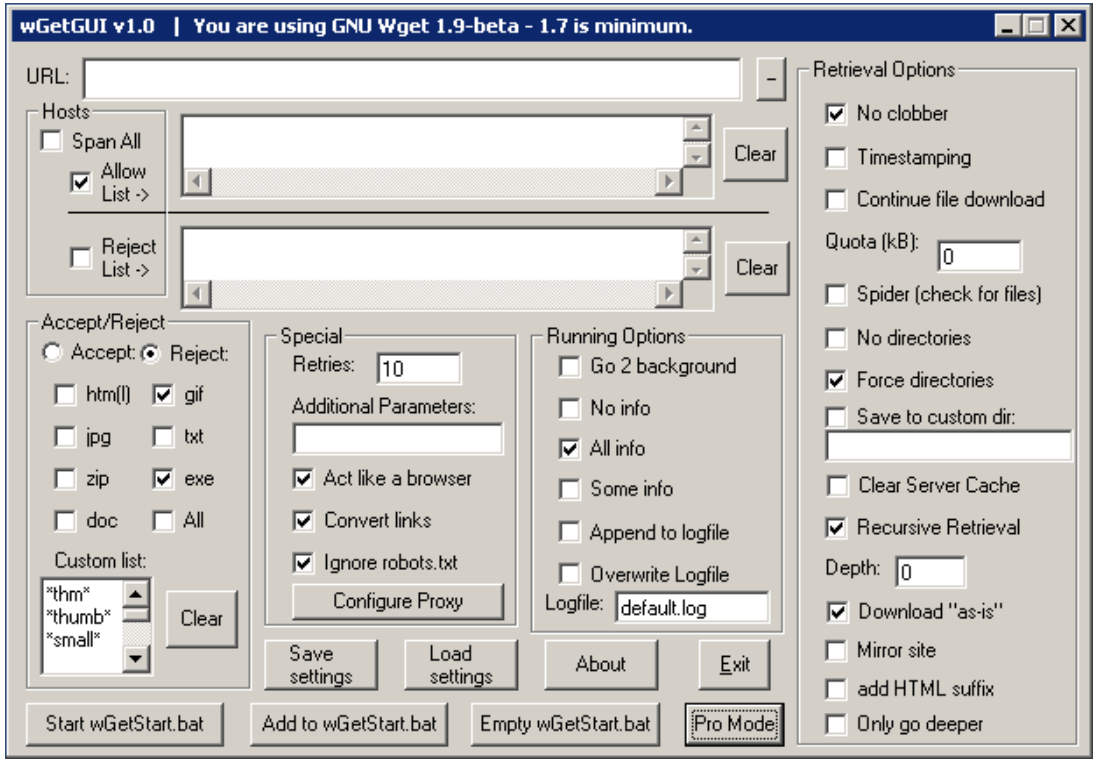
- Deep down inside every software developer, there's a budding graphic designer waiting to get out. And if you let that happen, you're in trouble. Or at least your users will be, anyway…

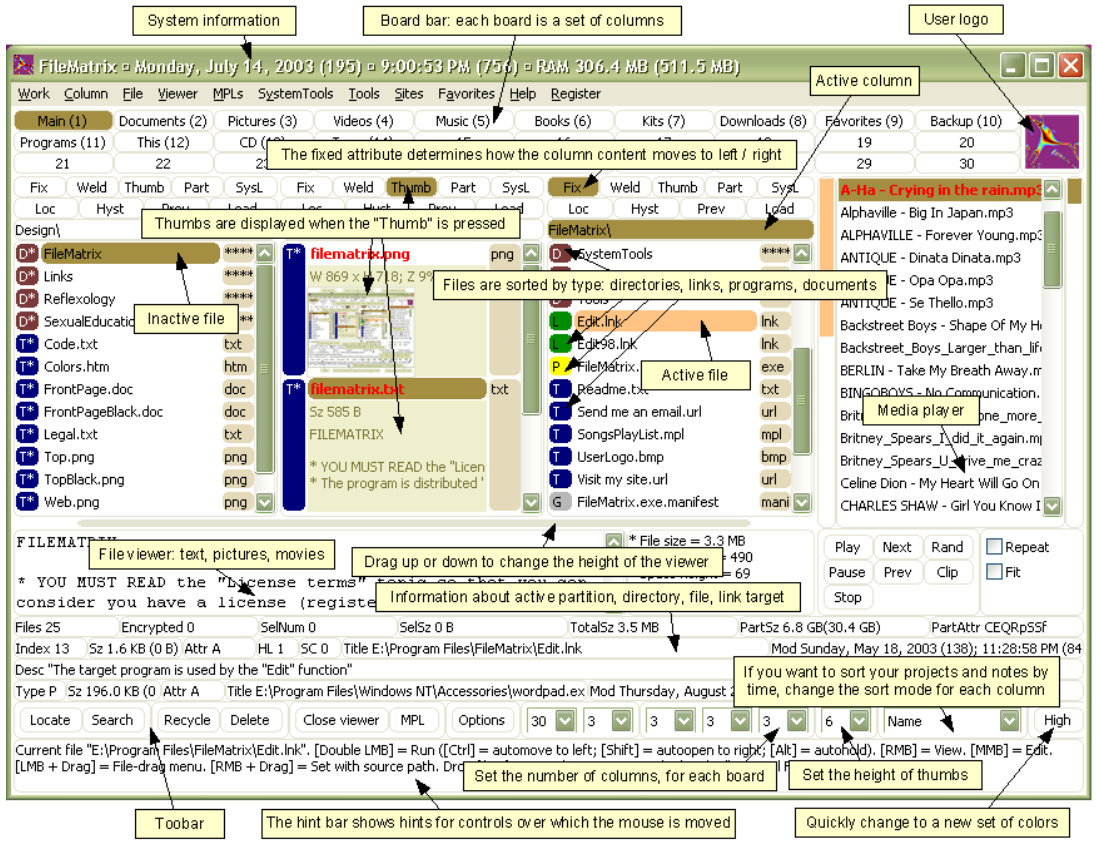
Jeff Atwood, 2006
https://blog.codinghorror.com/this-is-what-happens-when-you-let-developers-create-ui/

- 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

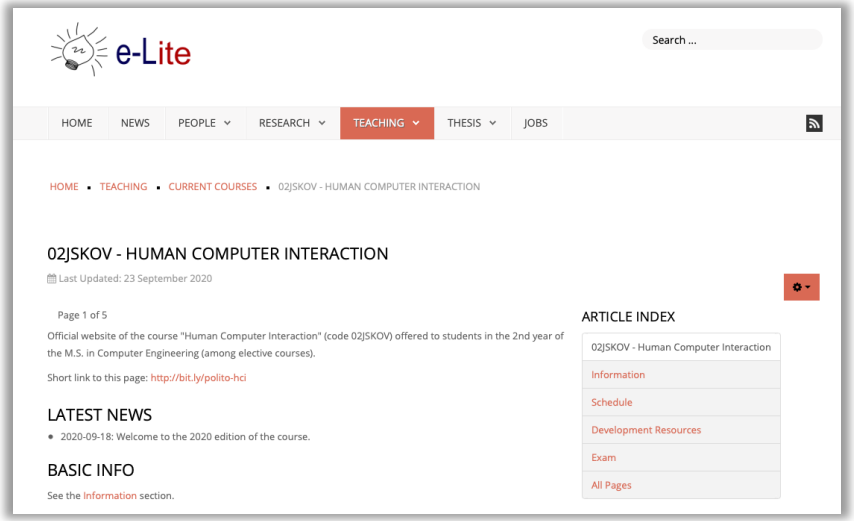
- Learning method
  - project-based → students learn by doing a project
  - problem-based → the project work starts from elicited and real users' needs
- Projects developed **during** the semester, with intermediate milestones and deliverables
- Contemporary communications and project development tools 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_wmwQ7ipQNDCLOhoB2I9PpscpD
  - Portale della Didattica
- GitHub - https://github.com/polito-hci-2020
  - Examples, exercises, group work

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 (Italian time)
  https://us02web.zoom.us/j/82170392211?pwd=aHRtMEc0MFVUZU9JV2tvLzV5c0duZz09

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

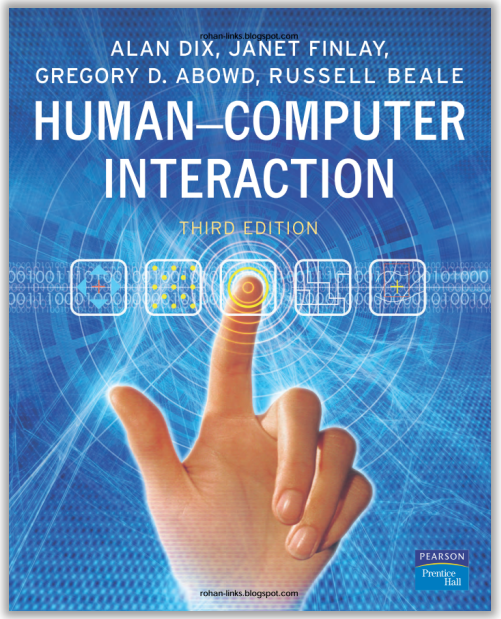
- No suitable textbook for the whole course

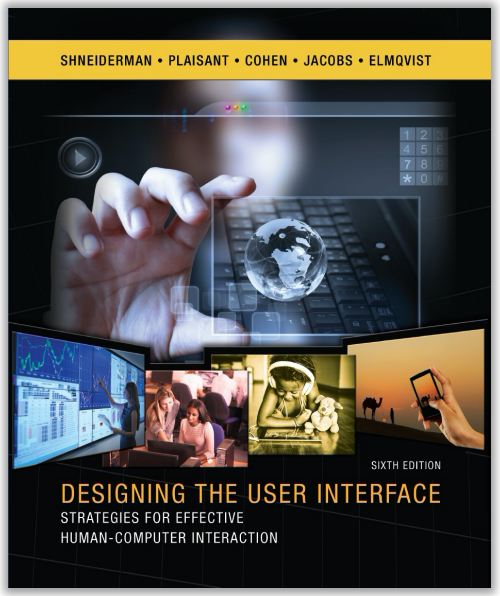
- Teachers' slides
- Lecture videos

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

Suggested Books

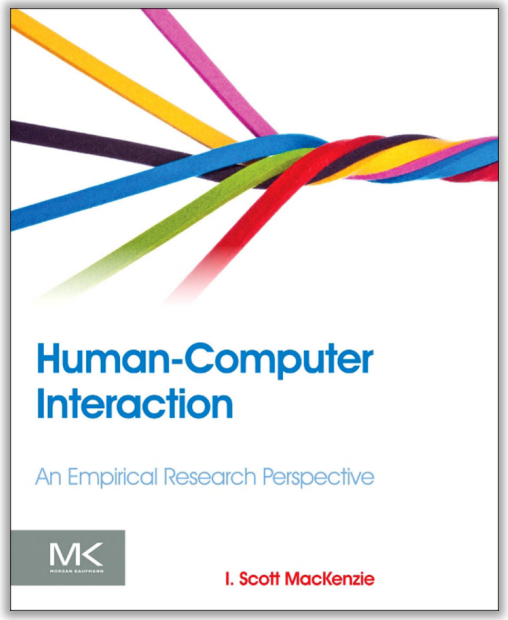
- Alan Dix, Janet Finlay, Gregory D. Abowd, Russel Beale, "Human-Computer Interaction", 3rd edition, Prentice Hall, 2004, ISBN 0-13-046109-1
- Shneiderman, Plaisant, Cohen, Jacobs, Elmqvist, "Designing the User Interface: Strategies for Effective Human-Computer Interaction", 6th edition, Pearson, 2016,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

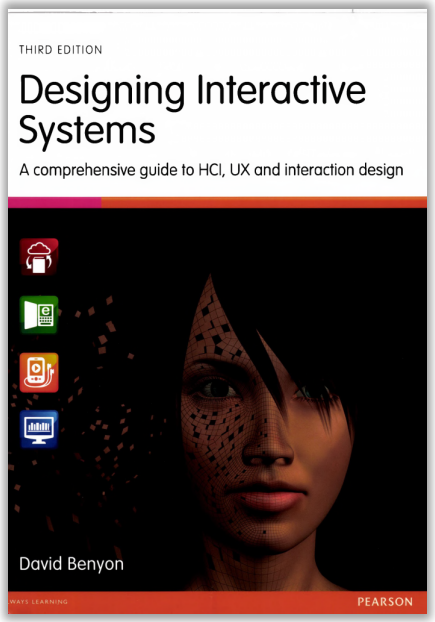




Suggested Books

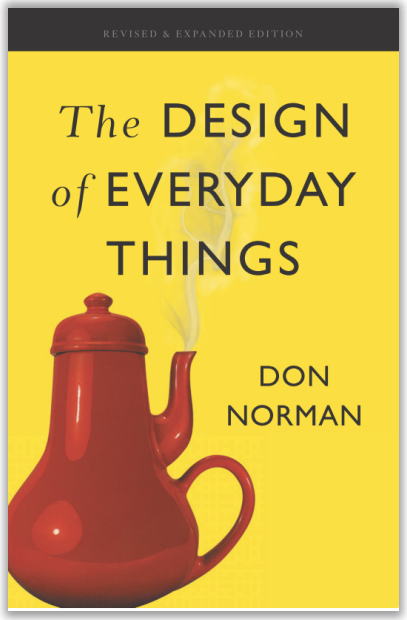
- I. Scott MacKenzie, "Human-Computer Interaction: An Empirical Research Perspective", Morgan Kaufmann, 2013, ISBN 978-0-12-405865-1
- David Benyon, "Designing Interactive Systems", 3rd edition, Pearson, 2014, ISBN 978-1447920113

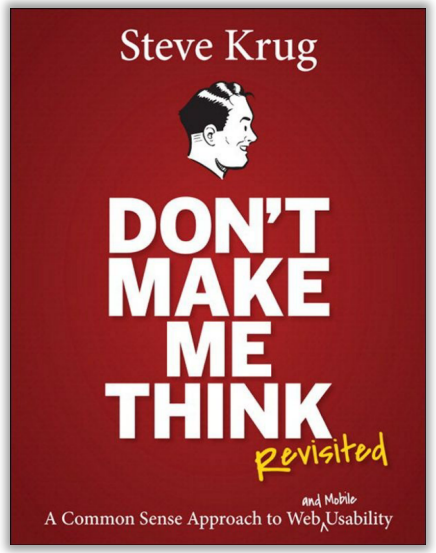




Suggested Books

- 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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