
IPM 12/13

Course Projects

Licenciatura em Ciência de Computadores

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Details on course projects

- **Group project:**
 - Recommended: 3 students
 - Different group sizes are only possible if validated by the lecturer.
- **Two components:**
 - Written report – 50%
 - Software implementation – 50%

Scenario for this work

- You have a small company that does HCI design and implementation.
- I have a big company that needs an HCI task and has money to ‘buy it’.
- Your **course project** is to provide a solid proposal that will make me buy the HCI solution from your company.
 - How is this proposal?

Proposal - Report

- You need to convince me to invest in your solution.
- First: Write a report where you have studied the problem and propose a solution:
 - What is the objective of the work, the available technology, and who are the end-users?
 - Given this, what are my ‘killer ideas’?
- **Deadline: 1st November 2012**

Proposal – Prototype

- I am hard to convince!
- Second: Produce a prototype that convinces me that your ‘killer ideas’ will work!
 - Does not need to be a finished product.
 - Needs to demonstrate that the HCI is adequate.
 - I expect a graphical interface with a well-defined API, that could be ‘attached’ to a working version of the full software.

Summing up – Project Details

- **Sell me your solution.**
 - Report – Pdf File
 - Prototype
 - JAVA (AWT or Swing)
 - Others
- **Questions?**

Project topics

- I will give you some possible topics for your course project.
- You can suggest your own topics, but I need to validate them.
- Characteristics of a topic:
 - Has well defined target users, objectives and available technology .
 - Can be prototyped using JAVA or other available technologies.

Topic 1: DigiScope Learning

- What if medicine students can learn and train cardiac auscultation at home?
- Build an effective interactive system that can be used by a student to:
 - View and listen to auscultations;
 - Learn the mechanical gesture of listening;
 - Learn the perception and interpretation of heart sounds.
- As transparently as possible!

DigiScope Learning



Details

- **Objective:**
 - Build an interactive system for learning and training cardiac auscultation at home
- **Target user:**
 - Medicine students
- **Available technology:**
 - Tablet

Topic 2: Telemedicine at home

- Can we monitor people in their homes if a medical professional visits them using an interactive system?
- Build an effective interactive system that can be used by a medical professional to:
 - Gather, record, transmit relevant vital signs;
 - Enables remote contact with a medical specialist.

Telemedicine



Details

- **Objective:**
 - Build an interactive system for collecting vital signs from patients in their homes, enabling remote contact with specialists
- **Target user:**
 - Nurses
- **Available technology:**
 - Tablet

Topic 3: Usability study of Healthcare Social Media

- How can the healthcare social media help patients face their diseases?
- Propose a new model for healthcare social media that can be used by patients, family's patient and health care provider:
 - Perform a usability study of the existing healthcare social media;
 - Compare the different models;
 - Propose a new model.
- As transparently as possible!

patientslikeme

 MedHelp®

 Inspire together we're better™

HealthCentral®

disaboom



MDJunction



sickweather

better
health™
smart health commentary

Hea!thrageous™

 CureTogether
Open Source Health Research

CARING  BRIDGE.ORG

 Daily Strength

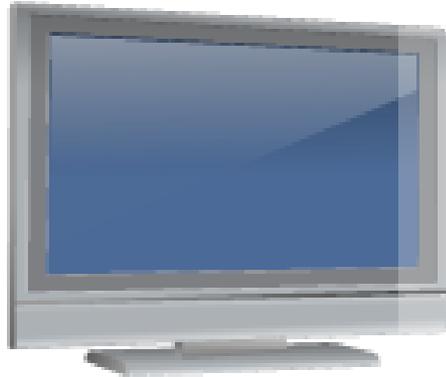
Details

- **Objective:**
 - Perform a usability study of the existing healthcare social media platforms and propose a new model for this kind social network
- **Target user:**
 - Patients, patients' families and health care providers
- **Available technology:**
 - Internet, any web-enabled device

Topic 4: CAGE

- **C**omputer **A**ssisted **G**astroenterology **E**xamination
 - GE rooms have state of the art imaging technology (HD cameras and screens).
 - However: Simply used as a live video stream.
- **What if:**
 - We can have a small tablet next to the physician, in which he can interact with the big HD screen?
- **Potential for:**
 - Computer Assisted Decision
 - Training environment for clinicians

Gastroenterology tomorrow

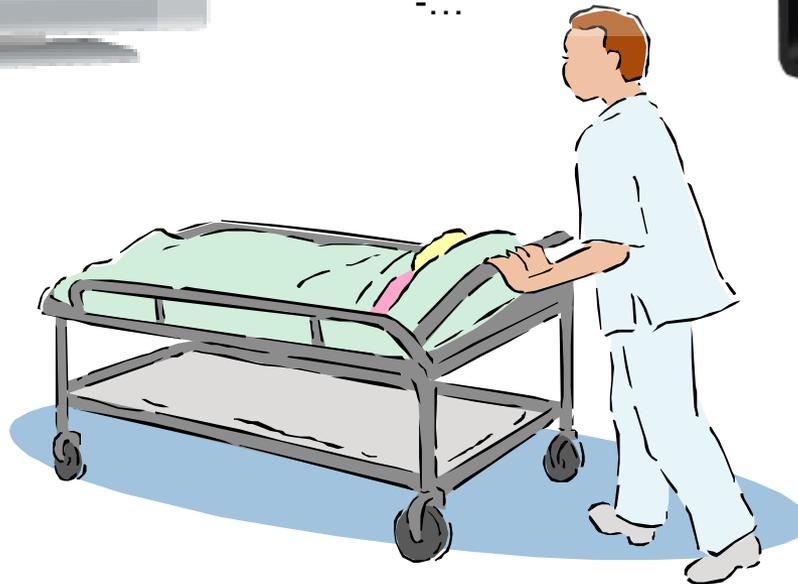


- Real-time video feed
- Patient information
- CAD – Computer Assisted Decision
- Similar exams
- Atlas queries
- ...



Superior Real-Time Interaction:

- Gestures
- Voice commands
- Touch-based interaction



What does this mean?

- Improved diagnostic capabilities
- Improved training capabilities
- Faster reporting

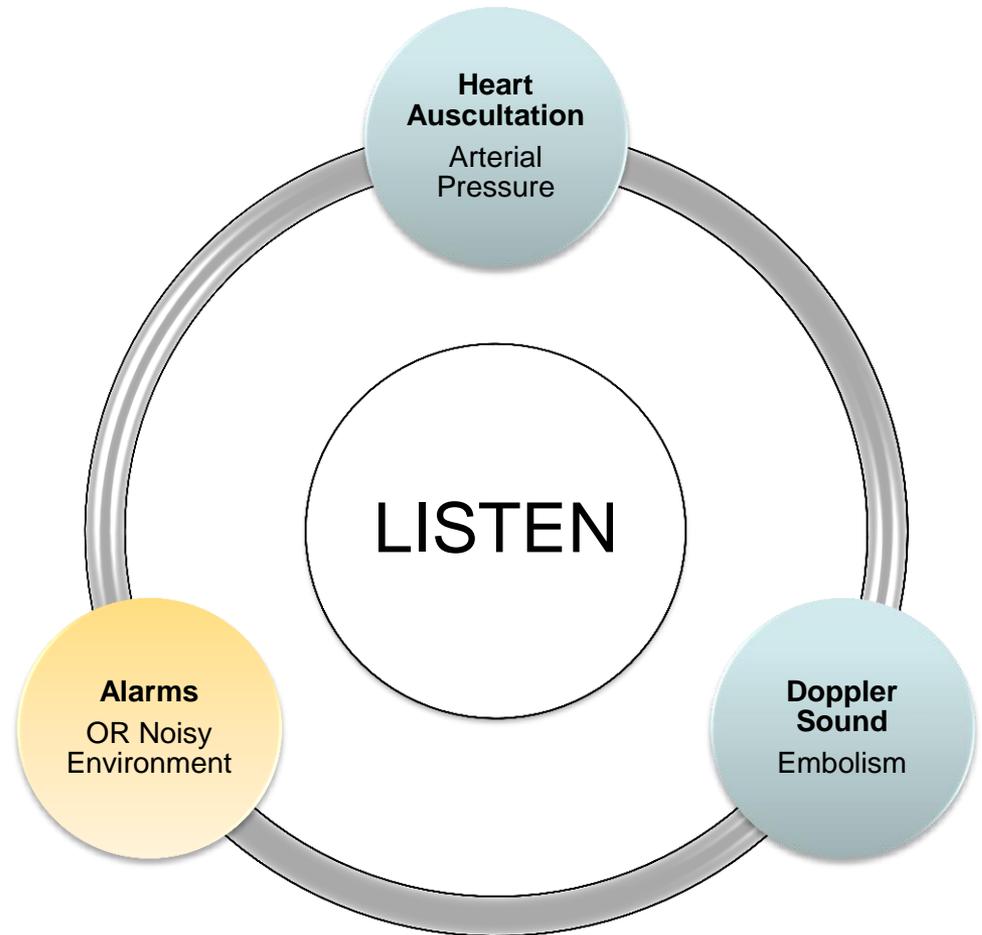
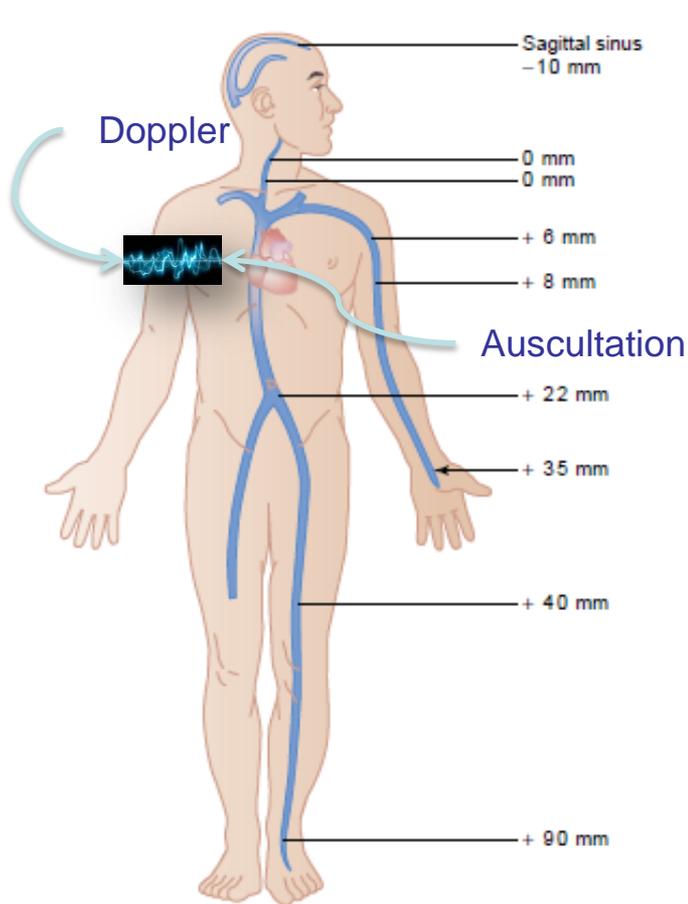
Details

- **Objective:**
 - Study interactive solutions for enhanced information access inside (GE) gastroenterology exam rooms
- **Target user:**
 - Gastroenterologists
- **Available technology:**
 - Tablet PC next to the patient's bed

Topic 5: Listen

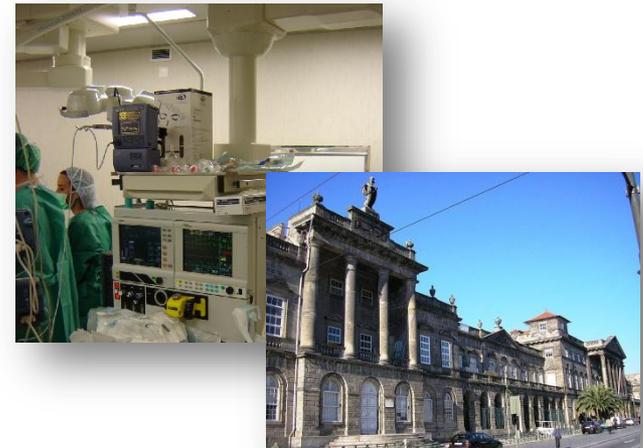
- **Sounds in the Neurosurgical Operating Room**
 - Noisy environment
 - Demand for constant attention
- **Build an interactive system to:**
 - Visualize and collect heart sounds
 - Doppler and Auscultation
 - View important information retrieved from the signals
 - Screen for embolism and alert to critical events

Sounds in the OR



Details

- **Objective:**
 - Build an interactive system to visualize data and provide alarms based on heart sounds
- **Target user:**
 - Anesthesiologists
- **Available technology:**
 - PC



Summing up – Project Topics

- Various different proposed topics.
- No problem if several groups choose the same topic.
- If you don't like them feel free to propose one!
 - Problem? Technology? Target users?
 - Each new topic needs my validation!

Discussion

- Create groups by next week (compulsory).
- Choose / Propose a topic (highly recommended to do it quickly!).

- Questions?