

Computer Vision for the Blind

Projektpraktikum 2012

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Why?

- Vision may be the most important sense
- 39 million blind people; 246m low vis.
- Cameras and computers are cheap

For the "praktikum":
Wide range of topics



General

- Who?
 - Boris Schauerte: CVHCI, Vision
 - Manel Martinez (baby; may join later on)
 - Angela Constantinescu: SZS, Sonification
 - Rainer Stiefelhagen: CVHCI & SZS
- Group meeting once a week
 - Initial kick-off meetings (getting a task and started)
 - People report about their problems and solutions
 - (Doodle)
- Work packages / Tasks
- In the End: Demos!

Questions

- Attended lectures?
- Programming experience?
- Why are you interested in the praktikum?
- What do you expect from the praktikum?
- What do you expect from us?

What we think our task is ...

- supervise/advise/guide your work
- share our (practical) experience(s), i.e. what Prof's won't tell you in lectures

Tasks

- Scenarios, e.g.
 - Help people communicate with other people
 - Help people navigate
 - Help people recognize objects in the environment
- Some suggestions:
 - "Guiding the focus of attention of blind people"
 - "Video-based localization without mapping"
 - "Detecting important signs and landmarks", e.g. Zebra crossings, warning signs, traffic lights, ...
- Homework:

Think and read about your topic of choice!

How to approach CV

1. choose a topic
2. read about it (more on the next slide)
3. choose a (set of) method(s)
4. record a data set
5. implement the method
6. test the method
 - a. it works! Create a live system/demo
 - b. fail! Find out why (otherwise you completely wasted your time ... and mine) - go back to (3)

Sometimes (especially for HCI):

direct live (prototype) system (kill 4; merge 5/6)

How to read a paper, faster

1. read the abstract
2. have a look at the graphics/captions
3. read the conclusion (skip if copy-paste abstract)
4. check the results/evaluations (scenario? too simple? convincing? sanity check!)
5. if still interested (i.e., not disappointed), read the rest

Always: Do not blindly trust the authors! It helps to think of it as if buying a used car ...

Never forget: Have fun!

"Choose a job you love and you will never have to work a day in your life"

- Confucius