# Computer Vision for the Blind

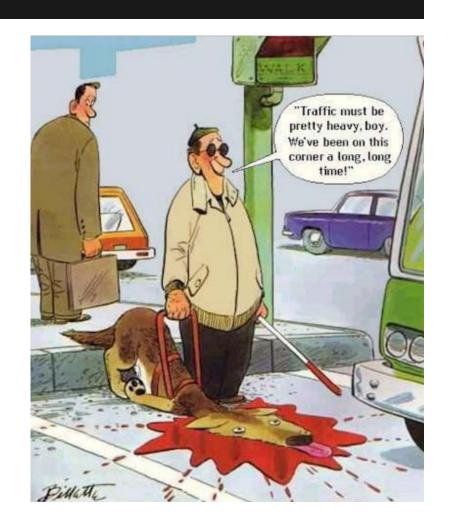
Projektpraktikum 2012

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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 <u>task</u> 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 <u>your</u> 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 <u>not</u> 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