Computer Vision for the Visually Impaired

Description

Aiding visually impaired, e.g. blind, people in their activities of daily living is an important aspect of assistance technologies. To this end, we develop novel technologies using state-of-the-art computer vision technologies in order to, e.g.,
- perceive colors and recognize objects
- (re-)enable people in natural human interaction through detection and interpretation of non-verbal cues (e.g. facial expressions, who-is-looking-at-whom, etc.)
- guide/navigate people in urban environments

Therefore, we are searching for students to work with us on transferring state-of-the-art computer vision technologies into this novel application area.

Vuzix WRAP 920 AR+ wearable camera glasses

Tasks
- develop/implement state-of-the-art computer vision algorithms
- develop methods to display/output the information to visually impaired users
- create/evaluate-on appropriate data sets

Prerequisites
- solid C++ and/or Matlab knowledge
- interest in human (audio-visual) interaction, navigation, and/or recognition tasks
- you have attended some of our lectures/seminars/lab-courses and are interested in computer vision, human-machine interaction, and/or machine learning

Questions? Contact!
Please contact Boris Schauerte (schauerte@kit.edu; Building 50.20, Room 229), if you are interested in the topic and/or have any further questions.