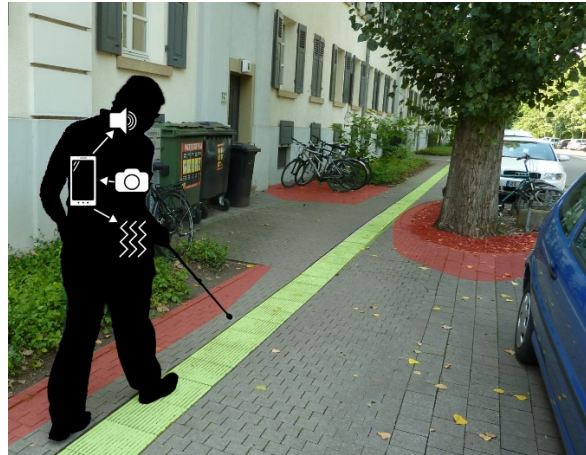


**Master Thesis:****Guidance Systems for the Blind and Partially Sighted**

In cooperation with the Study Center for the Visually Impaired (SZS)



To assist blind and partially sighted people navigate safely and explore (unknown) urban areas is an essential challenge towards an increase in their autonomy, mobility, and overall life quality. Although existing consumer GNSS systems deliver accurate location and directionality information for points of interest, they are “blind” with respect to a person’s immediate surroundings. Hence, we require complementary assistive systems to perceive the surroundings, e.g., in order to: guide the user around potential obstacles, warn him of dangers in his path, inform him about interesting spots, locate doors and buildings, cross busy intersections, find the safest route towards a destination, and many more possible scenarios.

**Tasks/Requirements**

- develop and implement *state-of-the-art* computer vision algorithms (such as C++, Matlab, Python, OpenCV, Tensorflow, Torch, ...)
- opportunity to (create and) work with large image/video datasets
- prior knowledge and/or experience with computer vision (CV:HCI lectures, seminars, practical courses, ...) and/or Deep Learning

**Contact**

Please contact Daniel Koester ([daniel.koester@kit.edu](mailto:daniel.koester@kit.edu)) or come and visit us directly at <http://cvhci.anthropomatik.kit.edu/~dkoester>.