EBERHARD KARLS UNIVERSITÄT TÜBINGEN

Mathematisch-Naturwissenschaftliche Fakultät
Fachbereich Informatik
Kognitive Systeme (Prof. A. Zell)

Bachelorarbeit

Online Gesture Recognition for Robot Control

Recent advances in the field of computer vision, especially using Deep Neural Networks, provide mobile robots the cognitive capabilities for new types of vision based Human-Robot-Interaction. The PoseMachines[1] method can detect the poses of multiple persons in real-time. Tracking the pose of a specific person over time allows extracting gestures which could be used as commands for a mobile robot.

The goal of this thesis is to implement a method which utilizes the pose estimates provided by PoseMachines to perform online gesture recognition. Preferably, these gestures should be turned into commands for Human-Robot-Interaction.

Requirements:

*   Good programming skills (Python or C++)
*   Knowledge of *ROS (Robot Operating System)* is beneficial

[1]Cao, Zhe, et al. "Realtime multi-person 2d pose estimation using part affinity fields." *arXiv preprint arXiv:1611.08050* (2016).

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