

This dataset is recorded for the evaluation of human localization with visual sensors in warehouse environments. A person who recorded the dataset wore a vest with camera setup at its back. The setup consisted of two cameras: the stereo camera, Old Ironsides, which was oriented horizontally and the monocular camera, Basler ace acA2440-35um, pointed downwards. The person walked through the arena which simulated a warehouse-like environment. Throughout the arena, the floor is marked with ground markers whose position is known. The exact position of the camera setup is tracked with the optitrack system, which is used for localization ground truth.

The aim of the system is to perform localization of the person through the combination of visual odometry pose estimation from the stereo camera and the localization relative to the ground markers.

This folder contains three ROS .bag files with recordings taken at IML hall in Dortmund. Each .bag file contains:

- raw left and right image of the stereo camera merged in one message
- imu measurements of the stereo camera
- image from the monocular camera
- monocular camera info
- pose measurements from the optitrack system

stickers_database.txt file contains the exact pose of each ground marker.

Each row in the file defines pose of one ground marker:

- [marker's ID] [x] [y] [z] [roll] [pitch] [yaw] [marker's name]

The pose of the markers is same for all .bag files.

stereo_camera_parameters.txt file contains parameters of the stereo camera.

The transformation matrix between the left camera of the stereo pair and the monocular camera is:

- roll: -46.7954
- pitch: -1.30813
- yaw: 0.00529873
- x: 3.65486 cm
- y: 7.73582 cm
- z: 4.13448 cm