Human Motion Analysis with Vicon

The human motion capture studio provides a unique facility for capturing and analyzing human motion as well as for the mapping to humanoid robots. The studio is equipped with 14 Vicon MX cameras (1 megapixel resolution and 250 fps), microphone array and several kinect cameras. Several tools for motion post-processing of recorded data, normalization, synchronization of different sensor modalities, visualization exist. In addition, a reference model of the human body (The Master Motor Map, MMM) and a standardized marker set allow unifying representations of captured human motion, and the transfer of subject-specific motions to robots with different embodiments. The motion data in the database considers human as well as object motions. The raw motion data entries are enriched with additional descriptions and labels. Beside the captured motion in its raw format (e.g., marker motions), information about the subject anthropometric measurements and the setup of the scene including environmental elements and objects are provided. The motions are annotated with motion description tags that allow efficient search for certain motion types through structured queries.

Key Features

- Large-scale human motion database
- 14 VICON cameras
- Multi-Modal recordings: different sensor combinations possible (force, IMU, audio,…)
- Master Motor Map: reference representation of the human body

Possible Applications

- Data-driven methods for motion and action learning
- Linking motion to natural language
- Whole-body motion segmentation
- Learning whole-body motion primitives
- Human Motion Analysis
- Large-scale whole-body human motion database

Access information

Corresponding infrastructure	Karlsruhe Institute of Technology Institute of Anthropomatics and Robotics - High Performance Humanoid Technologies Lab (IAR H2T)
Location	Adenauerring 2, 76131 Karlsruhe, Germany
Unit of access	Working day

Technical specifications

Capture size volume	6 x 4m
Number of cameras	14 Vicon cameras (10 MTX T10, 4 Vero)
Update rate	330FPS
Software	Nexus 2.7 and MMM

Additional information

Additional Information available here and here

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The whole body human motion database is publicly available.