The National Facility for Human-Robot Interaction Research

DESCRIPTION OF YOUR TECHNOLOGIES

The National Facility for Human-Robot Interaction research is a multi-institutional research facility designed to unobtrusively monitor human behaviour in a large, repurposable experimental space.

On-premises computing resources for the real-time capture, processing and storage of large and complex data sets including high-definition video from 45 cameras in top-down and side-on configurations, pervasive depth ranging from multi-echo lidars and RGBD depth-cameras.

In addition, the 16m x 7m x 3m experimental space is fitted out with 21 high-quality overhead microphones and fully programmable lighting, air conditioning, 8-channel sound and a 3-channel scent generator for a controlled atmosphere during experiments.

Out-of-the-box data collection for a wide variety of human and object physical, physiological and affective factors in real-time including multimodal person detection and tracking, object detection and classification, pose, gesture, etc. allows the collection of data sets that capture human affect and intent.

COMPETITIVE ADVANTAGES

- Human physical and physiological factors can be estimated remotely in a markerless, unobtrusive way: participants can come as they are and are not required to wear devices that may cause discomfort or cause changes in behaviour due to an awareness of observation
- Fully wheelchair accessible
- Experimental space supports large groups, custom props, environments, dynamic and customised lighting, sound, scent
- ROS interface and interoperability means researcher-provided robots can be easily integrated
- In-house, dedicated robots allow for studies in behaviour without large upfront capital investment
- Remote telemetry and control, as well as sound isolated pre- and post- interview rooms support end-to-end experiment setup
- **No other comparable facility exists worldwide**

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