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Contact: c.h.ayuningtyas@tue.nl **Analyzing Ambient Sensor Data**

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for Multi-User Home Activity **Monitoring and Recognition**



Automated daily activity monitoring and recognition in home environments have multiple applications such as home automation and ambient assisted living for

the elderly. Our work deals with the case of multiple inhabitants in the environment. We explore different aspects in the data collection process including designing the sensing infrastructure, investigating privacy vs. accuracy, and visualizing the data in different ways.

Ambient Sensors for Activity Monitoring

Ambient sensors attached to household appliances pose minimum privacy and comfort issues compared to other sensing modalities. Our testbed is a real house with four inhabitants. The collected sensor data are visualized in different ways for monitoring purpose.

Ambient Sensors



From left to right: magnetic contact, motion sensor, power switch, pressure switch



Sensor Events Visualization



Data Annotation with Activity Logging

The sensor data needs to be annotated with activity labels as the ground truth for further analysis. With no cameras due to privacy issues, two activity



ActifyWeb: A Web Application for Offline Logging



From left to right: activity timers, one click activity picker, daily activity chart, weekly activity chart

Aligning activities with sensor events

Designed Intelligence Group, Department of Industrial Design, TU/e