Video

Actigraphy

Free activities

Semi

Audio

Novay, Fraunhofer, VTT, DFKI, COBTEK.

COORDINATEURS: INRIA

Alzheimer’s Patients
clinical
Ambulatory
with
Living
undertake
home
Center
•
visualization
•
markers
approach
•
Description/Objective

SHARING RESOURCES

3.
2.
1.

Sensors

Protocol I (P1)

Recordings

2) Clinical Scenarios:

Population

SHARING RESOURCES

Clinical Scenarios:

1) Guided Activities or Physical Tasks (S01, ~5 min): analysis of kinematic parameters of the participant’s gait profile.

2) Semi-guided Activities (S02, 20 min. - P1/ max. 15 min. – P2): participants undertake a list of Instrumental Activities of Daily Living (IADLs)

3) Free activities (S03, recording duration: 30min – P1 / 5 min - P2): it assesses how the participant spontaneously initiates activities in the room

Recordings

Protocol I (P1): 37 video sequences are recorded for the three scenarios;

Annotation of the time period of Physical tasks and “IADLs”.

Protocol II (P2): 82 recording sessions

• 80 video sequences for the S01 (22 video sequences with the time period of each Physical task,);

• 70 video sequences for the S02 (40 video sequences with time period of “IADLs”);

• 80 video sequences for the S03 (no activity annotation is available for now).

VISEvAl: Visualization and Evaluation Tool

(AGPL license)
Define format for sensors (video camera, inertial sensor) activity recognition and ground-truth.

Large set of metrics:
• 9 distances (spatial and temporal)
• 3 filters
• 20 criteria

Video sensor criteria:
• detection
• classification
• tracking

Functionality criteria
• activity recognition

VISEvAl is an evaluation tool for video analytics and activity recognition:
http://team.inria.fr/stars/2012/02/02/viseval-software/

Multi-Modal Activity Recording

Sensors:

1. Video Data are composed of:

• RGB video camera (8 frames per second, 640x480 pixel resolution), and

• RGB-D video camera (~10 acquisition per second; Kinect®);

2. Audio Data are recorded with ambient micro. Wearable Inertial devices;

3. Actigraphy Data: MotionPod® (worn in the chest, 1data/s) and MotionLogger® (worn on the wrist, 4data/minute).

Proposed Multi-Modal Activity Recognition Framework

COORDINATEURS: INRIA

EIT ICT PARTNERS for Heath and Well Being: Philips, Lulea, Novay, Fraunhofer, VTT, DFKI, COBTEK.

CONCLUSION

• A Multi-modal dataset has been presented with a proposed multi-modal activity recognition framework;

• The VISEvAl tool is also presented, as it is used in Sharing Resources to support the Multi-modal dataset visualization and the evaluation of the proposed approaches for activity recognition.

• Besides to Health-care domain, it has been also tested on several kind of applications:

  • airport (multi camera, evaluates activity recognition and video algorithms for activity close to airplanes);

  • metro (camera, evaluates group behavior and person counting);

  • road (camera, evaluates wrong vehicle direction).

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