SS 2015

Social Robotics Seminar

Welcome!

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SS 2015

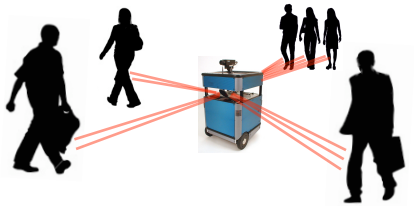
Social Robotics Seminar

Contents

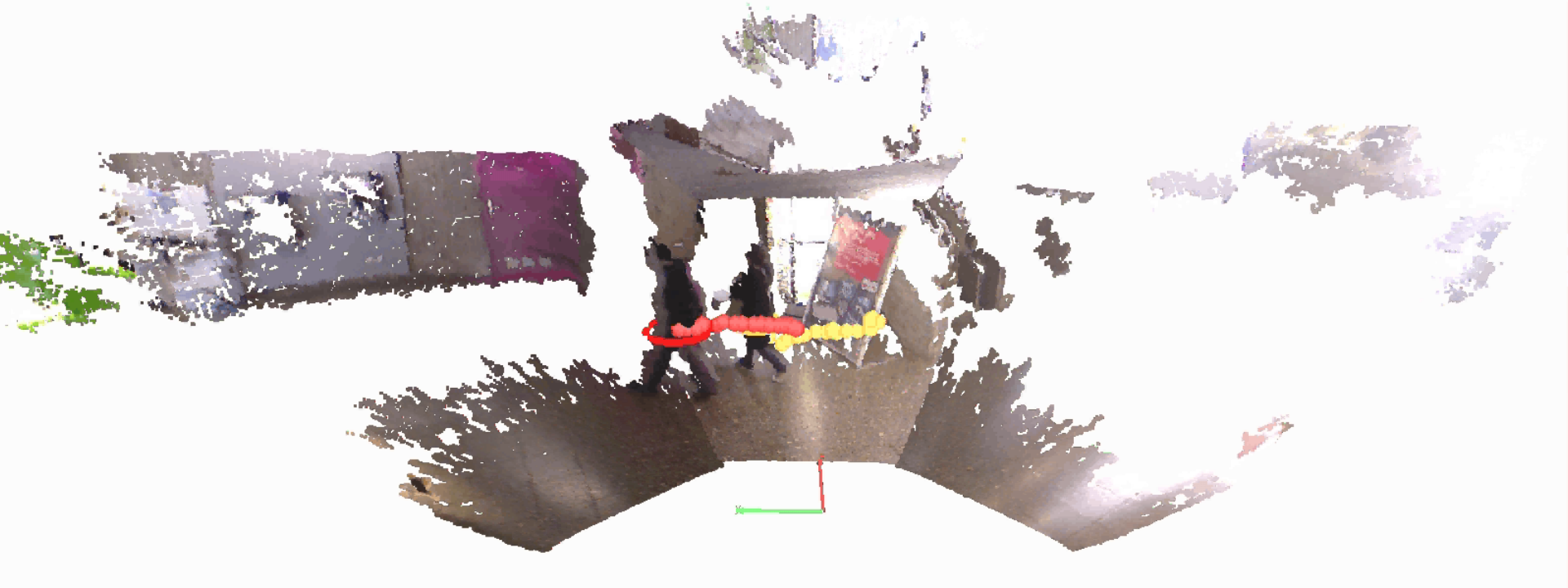
- Brief presentation of the Social Robotics Lab
- Introduction
- How to conduct a literature review
- How to read a paper
- Presentations of the papers

Social Robotics Lab

- **Social robotics and human-robot interaction** are growing research fields concerned with the questions how humans and robots can better **live**, **work**, and **interact** together
- Research areas
  - Perception of humans
  - Human behavior modeling and learning
  - Task and motion planning among humans
  - Design of human-robot-interfaces
  - Understanding human-robot interaction
- In other words: **„the human is in the loop“**
- Methods from robotics are combined with models, methodologies and insights from **social psychology**, **cognitive science** and HCI

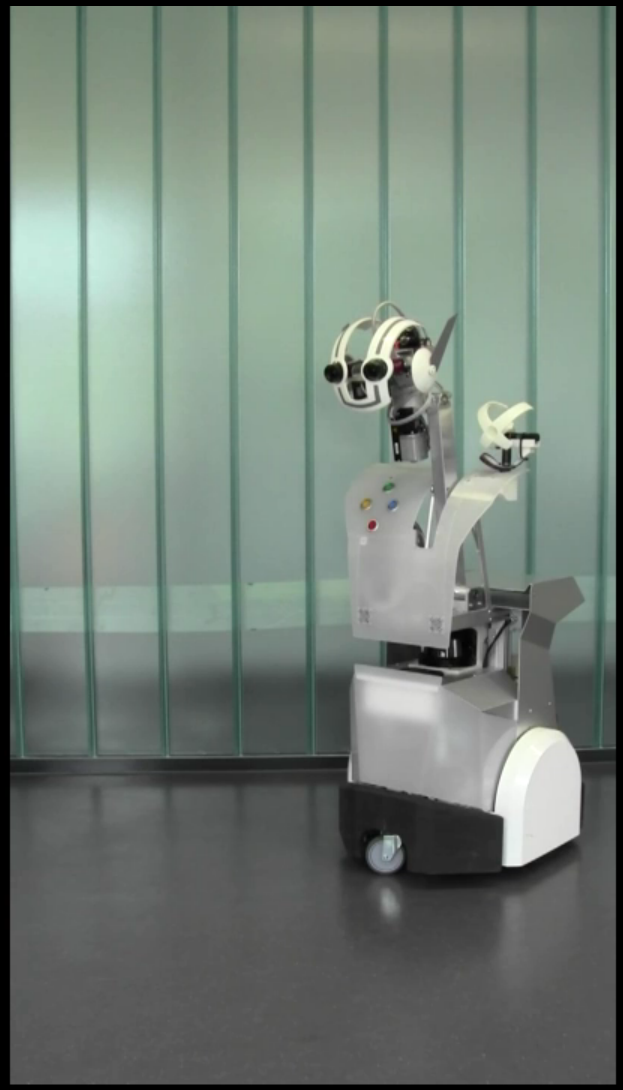


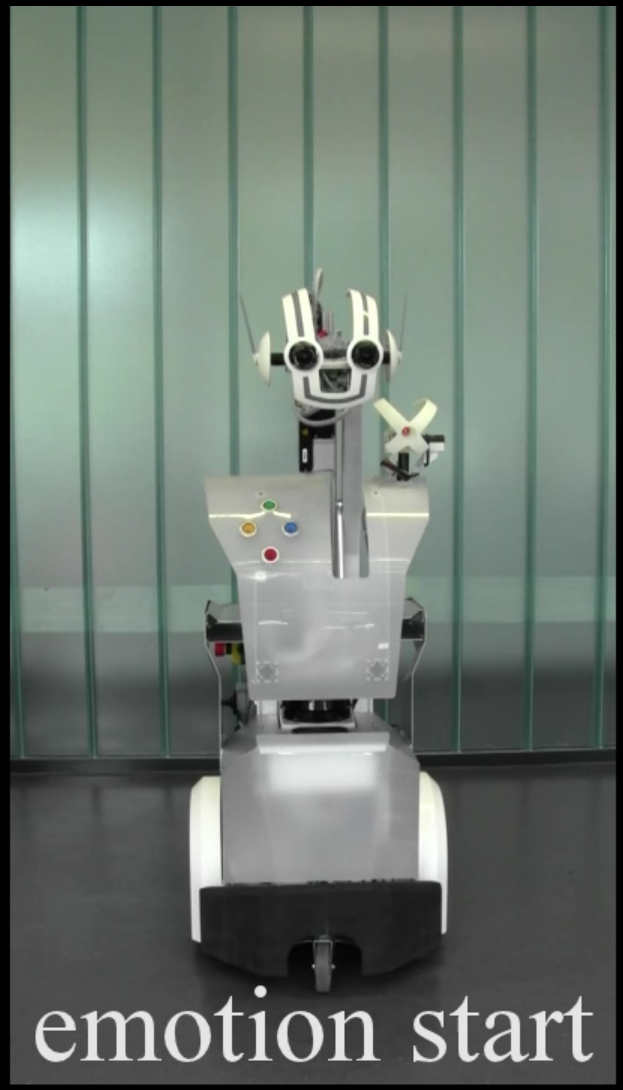
People Detection and Tracking

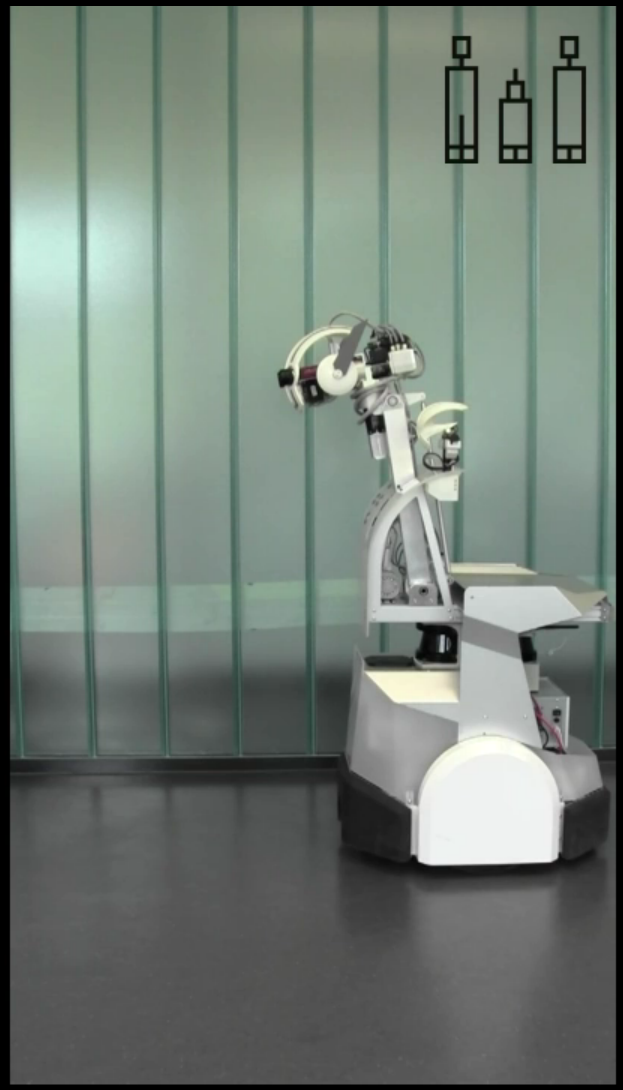


People Detection and Tracking

Emotional Body Language for HRI







Socially-Aware Coverage Planning

Learn how to cover an inhabited environment with minimal interference

- Spatio-temporal Poisson process model for human activities
- Approach: **asymmetric TSP with time-dependent costs**
- Applications: noisy vacuum robot, all coverage applications in human environments

Robot is in kids bedroom since at this time and place, encountering a human is improbable

It's around 8 pm, human agents are engaged into a dinner activity

Simulator of Human Activities, home environment

Overview

- In this seminar, you will learn to **search for**, **read**, **present** and **summarize** scientific papers
- In this way, students
  - learn to conduct a literature survey
  - learn to **understand** and **critically read** a paper
  - learn about **state-of-the-art methods** in the field
  - learn to **present** and **summarize a paper**
  - improve their presentation and scientific writing skills
- Language: English
- The seminar is restricted to **10 students**. First come, first serve.
- There are more students on the **waiting list**. Make up your mind.

Requirements

- In the area of your paper, conduct a small **literature review**
- **Present** your paper and the results of the literature review in a 30 min. talk
- **Blockseminar**
  - Attend the Blockseminar and **actively** participate in the discussions
  - Read all presented papers (also those of the **other** students!) in a quick "first-pass" fashion (see below).
- Write a summary about your **assigned** paper (<= 7 pages). The report should contain a section with the results of the literature review. This section should contain answers to the questions on slide nr. 17
- The **final grade** is a combination of four factors:
  - literature review (20%), presentation (30%), summary report (30%), active participation during the Blockseminar (20%)
- Talk and summary can either be in **German** or **English**

Hints for a good grade

- Some papers are **easier**, some are **more difficult**. For the sake of fairness, **additional work** and a particular deep understanding is expected for easy papers
- Additional work may include:
  - **Implementing** a method
  - Submitting **additional material** such as self-made animations
  - Explain a theory or method very well, as a **mini-tutorial**
  - Reading **more related papers** (e.g. earlier work from the same authors, more related papers, etc.) and show that you
- Make your presentation **exciting**, try to convince the audience of the quality and contribution of your paper
  - Use the videos and other material from the authors
  - Add your own material (graphs, animations, etc.)

Hints for a good grade

- Unethical behavior will result in a grade of 5.0
  - Examples include copying text, slides, material for your summary report or presentation from sources without proper citation
  - Wikipedia is **not** a serious scientific reference. Rare exceptions may apply
  - It has neven been easier to detect plagarism
- Plan accordingly! Avoid last-minute stress
  - Understanding a short 6-page paper will very probably require you to **study** (or even **implement**) several other papers (of the same authors, papers about the underlying theories)
  - This will easily take you **several weeks of work**

Organization

- **Today:** Introduction, short presentation of the papers
- **Friday, 8 May 2015**: Assignment of the papers to the students
- **Monday, 13 July 2015:** First version of the slides and the report must be sent to the supervisor
- **Monday, 27 July 2015:** Blockseminar in which all papers are presented and discussed
- **Friday, 31 July 2013:** Final version of the report has to be submitted to the supervisor.

See also: srl.informatik.uni-freiburg.de/ss15seminarsocialrobotics