

Your Hotel in Karlsruhe

Allee-Hotel

Kaiserallee 91
76185 Karlsruhe

Tel.: +49 (0) 721 985610

Bahn / by train

Für Anreisende mit der Straßenbahn: Sie erreichen uns vom Hauptbahnhof aus mit den Bahnen S11, S1, S2, S5, 2 (die Richtungen sind Rheinstetten, Rheinhafen, Hochstetten) die Fahrtzeit beträgt ca. 15 min. und endet an der Haltestelle Yorckstraße. Von dort müssen Sie zur linken Straßenseite ca. 100m laufen Richtung Mühlburg.

If you arrive by train at the central station take tramline S11, S1, S2 S5, or 2 (the directions are Rheinstetten, Rheinhafen, Hochstetten). After about 15 min, get out at the stop Yorckstraße. Go to the left side of the street (in the direction of travel) and walk about 100 m towards Mühlburg.

Auto / by car

Über Autobahn (A8, A5) oder Bundesstraße (B9, B10 oder B36) in Richtung Mühlburg/Entenfang sind wir schnellstens zu erreichen. Ihr Fahrzeug parken Sie sicher in der hauseigenen Tiefgarage.

The fastest way to reach us is via motorway (A8, A5) or federal road (B9, B10 or B36) in the direction of Mühlburg/Entenfang. You can safely park your car in the hotel's underground parking.

Start-up project

Social implications of robotics in manufacturing industry

KIT Zentrum/Schwerpunkt

Mensch und Technik

Project partners

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Worker-Robot interaction in manufacturing industry

IR@MI
Workshop 25.10. – 26.10.2012

Venue
Institut für
Technikfolgenabschätzung und Systemanalyse
Karlstrasse 11
76133 Karlsruhe



Worker-robot interaction in manufacturing industry:

implications for technology design, organisational re-structuring of work and learning

The extensive introduction of robotics in manufacturing industry has been a fact in the last decades. Most of capacities that envisage higher production performance levels are in the field of artificial intelligence applied to manufacturing tasks. However, some social aspects of automation are still not yet solved. Some deals with ergonomic design, but most deals with responsibility, situation awareness, risk assessment and quality of working life. In safer cooperative working conditions are relevant topics under the research topics expertise of “social implications of robotics”.

The traditional idea that automation is a technological milestone with evident economic and unquestionable benefits is still an approach that ignores research on the relation of automation and work organisation. Advanced automated systems can also be applied to worse working conditions and improve them. Humans are better at dealing with unexpected events to keep production lines running. But this perspective has been continuously threatened through other approaches that aim to avoid involvement of humans in the automated production systems. Further studies point

out the aspects related with safety in automated systems and responsibility on failures or unexpected occurrences. Interaction of humans with robots increases the importance of such aspects. This should not be a merely ergonomic dimension, but it should strengthen organisational issues (social implications) where different options are available. Organisational models that are able to achieve flexibility under complex frameworks are those that include advanced automated systems with the human involvement in decision process.

The social dimension derived from the worker-robot interaction possibilities in industry become a decisive aspect of the framework possibilities. This is a central motivation of this workshop: to discuss, analyse and assess the different technical options due to social features based on organisational strategies. The workshop will specifically focus on participative organisational which include different learning processes, competence building and decentralised decision making. This means that the place of humans in the design of HRI must be clear. These are concepts with higher relevance in production environments which have been neglected in the last two decades. The development of working competences, of distributed decision making and task enrichment systems, should integrate the new industrial robotics developments in order to improve the quality of work life standard. Such options and challenges will be intensively debated in the workshop.

The language of the workshop is English

Programme

Day 1

- 13:00 – 13:30 Registration & Welcome coffee
- 13:30 – 13:45 **Welcome address**
*Michael Decker (ITAS-KIT)/
Torsten Fleischer (ITAS-KIT)*
- 13:45 – 15:45 Discussions block I:
Where has social involvement on HRI debates gone?
António Moniz (ITAS-KIT)
- Involvement of social processes
Martin Fischer and Eike Zimpelmann (IBP-KIT)
 - Involvement of learning processes
Eva Zschieschang (ITAS-KIT)
 - Debate trends
- 15:45 – 16:15 Coffee break
- 16:15 – 19:15 Discussions block II:
How to design the human place in HRI?
Astrid Weiss (University of Salzburg, Austria)
Carsten Thomas (TU Dortmund University)
Marcel Mayer (Institut für Arbeitswissenschaft der RWTH Aachen)
Tamim Asfour (IfA-KIT)
- 19:15 – 19:30 **Closing remarks**
Martin Fischer (IBP-KIT)
- 20:00 - **Invited dinner at Allee Hotel**

Day 2

- 9:00 – 12:00 **Assessment and preparation of new proposals**