Seminar Summer Term 2012
Robust Reliable Robotics

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RWTH AACHEN UNIVERSITY

KBSG
Knowledge-Based Systems Group

Organization

Website:

`http://www.kbsg.rwth-aachen.de/teaching/SS2012/SemR3`

Mailing list:

`semss2012rrr@lists.kbsg.rwth-aachen.de`

Seminar Dates:

- Introductory Meeting: Wednesday, April 11th 2012
- Talks: One or two days of talks, August 1st/2nd

Location:

All meetings take place in *Seminar Room I5 (6202)*

Seminar Paper

Given literature is a **starting point for own literature search**.
You need to read a number of references to complete the picture!

- Seminar paper and talk should be in English!
- Prepare the paper and the slides preferably with LaTeX
- About 20 pages (including references)
- Your paper will need multiple iterations
- Contact your adviser in case of questions, submit early!

Talk

Slides to **condense and support transfer of your knowledge**.
Be brief and precise so your listeners can follow!

- Talk must be in English
- Presentation should be ∼35 min + 10 min discussion
- Prepare the slides preferably with LaTeX
- Contact your adviser in case of questions

Prepare slides immediately after writing your seminar paper!

Rescission Policy

Up to three weeks **from now on** you are allowed to recede from the seminar without any consequences.
A later rescission will be graded as a failed attempt!

Library Tour/Training

- specialized training on literature search:
  small groups (up to 6), individual examples,
  local and supra-regional catalogs and databases
- Presentation: distinguishing different types of literature
- acquisition of literature:
  delivery service, full text search,
  lending and interlending, etc. pp.
- guided tour: the CS-Library and what it has to offer
- rally: practical exercise
- length: 2 h

Participation mandatory if not already completed!

Topic: Robust Reliable Robotics

Your will work on current research papers on

- **reliable** robotics, i.e. repeatability of task execution and coping with variances and disturbances, and
- **robust** robotics, i.e. achieve tasks even in the presence of faults and failures in software and hardware

- Closely inter-twingled sub-topics
- Particular keyword for your research: execution monitoring
- Also: debugging and tool support for robotic applications

Topics

1. Expert Systems for Fault Detection
2. Execution Monitoring using Semantic Knowledge
3. Model-free Execution Monitoring in Behavior-based Robotics
4. Execution Monitoring in Data Estimation Processes
5. Debugging Large Multi-Robot Systems
6. Scalable Robot Fault Detection and Identification
7. Execution Monitoring of High-Level Robot Programs
8. Plan Reversals for Recovery in Execution Monitoring

Schedule

Due Dates

May 23rd	literature list and seminar paper outline
June 15th	seminar paper draft due
July 2nd	**final** seminar paper (∼20 pages)
July 23rd	**final** version of slides
∼August 1st/2nd	talk of about 35 min + 10 min discussion

Contact your adviser

- with the appropriate results at the given deadlines
- in case of questions (be specific!)

Respect your adviser's response time!