

Proseminar Algorithms and Tools for Verification

Introductory Meeting

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Theory of Hybrid Systems
Informatik 2

WS 12/13

Topics

- Verification
 - Transition Systems
 - Hybrid Systems
 - Probabilistic Systems
- Techniques
 - Abstraction
 - Simulation
 - SAT/SMT Solving
 - Symbolic Methods
- Tools

Goals of this proseminar

- Independent elaboration of a topic
- Structured scientific working
- Development of a short paper
- A good talk addressing the other students
- Literature research
- \LaTeX skills

Paper and Talk

Paper

- 6 pages
- Font size 12pt
- Text begins on titlepage
- No index of contents
- Spell checker
- Paper has to be written in \LaTeX

Talk

- 20 minutes
- Talk is for other students
- \LaTeX -Beamer

TODO

- Fix dates for
 - Introduction to \LaTeX
 - Introduction to "How to give a talk"
- SVN-account for \LaTeX -templates and personal files

Important Dates

- 18.10.2012 Contact supervisor
- 13.11.2012 Structure of paper
- 20.12.2012 Paper ready
- 10.01.2013 Final paper
- 25.01.2013 Slides ready
- 01.02.2013 Final slides
- ??02.2013** Presentation

Topics

topic, student, supervisor Verification

- 1 Ordered Binary Decision Diagrams (OBDDs), Andre Mann, Loup
- 2 Abstraction/Bisimulation, Vasilena Koleva, Ábrahám
- 3 Probabilistic Bisimulation, Phillip Florian, Jansen
- 4 Hybrid Automata, Christopher Spinnrath
- 5 Sequential Function Charts
- 6 SAT Encoding
- 7 Bounded Model Checking
- 8 Simplex
- 9 Model Checking Probabilistic Systems
- 10 Model Checking Probabilistic Systems with Costs
- 11 Timed Automata (*)

Tools

- 12 UPPAAL (*)
- 13 COMiCS
- 14 SMT-RAT
- 15 SpaceEx (*)
- 16 PRISM
- 17 REDUCE
- 18 SPIN
- 19 Z3