

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

- 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