Proseminar Algorithms and Tools for Verification
Introductory Meeting

Erika Ábrahám,
Florian Corzilius, Gereon Kremer, Johanna Nellen, Stefan Schupp

LuFG Theory of Hybrid Systems

WS 2015/2016

Contents

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

- Minimum 6 pages, maximum 8 pages
- Font size 11 pt
- 3 cm margin (top/bottom/left/right)
- Text begins on title page
- No table of contents
- Spell checker
- Paper has to be written in LaTeX

Talk

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

To Discuss

- Library tour: Wednesday, 28.10.2015, 11.00-12.00h
- Fix dates for
    - Introduction to LaTeX: Friday, 23.10.2015, 12:15-13:45h
    - Training for "How to give a talk"(somewhere between 14.12. - 18.12.2015)
- SVN-account for LaTeX-templates and personal files:
    - `username`: prefix of your rwth-aachen email address (e.g., florian.corzilius@rwth-aachen.de → florian.corzilius)
    - `password`: Will be sent individually
    - `url`: `http://srv-i2.informatik.rwth-aachen.de/repos/thsws15/proseminar/students/<lastname>`
    e.g., Florian Corzilius → `http://srv-i2.informatik.rwth-aachen.de/repos/thsws15/proseminar/students/corzilius`

Important Dates

23.10.2015	Contact supervisor
28.10.2015	Library tour
13.11.2015	Structure of paper
11.12.2015	Hand in paper
08.01.2016	Final paper
29.01.2016	Hand in slides
05.02.2016	Final slides
TBA	Presentation

Topics

1. Timed and hybrid automata
2. Temporal logic
3. Bisimulation

4. Reachability analysis
5. Flowpipe construction
6. Space set representations for hybrid systems

7. SAT/DPLL
8. SMT (demonstrated on equality logic)
9. Difference logic

Topics

1. Timed and hybrid automata, *Nellen*
2. Temporal logic, *Ábrahám*
3. Bisimulation, *Ábrahám*

4. Reachability analysis, *Ábrahám*
5. Flowpipe construction, *Schupp*
6. Space set representations for hybrid systems, *Nellen/Schupp*

7. SAT/DPLL, *Corzilius*
8. SMT (demonstrated on equality logic), *Kremer/Corzilius*
9. Difference logic, *Kremer*