

Testing Embedded Systems

Content

In this seminar, we will discuss various methods that can be applied for testing embedded systems. Some of these techniques are already being applied within the industry, others are still being applied within the area of research.

In this lecture, we will take a look at the following methods (among others):

- Hardware In the Loop (HIL)
- Software In the Loop (SIL)
- Model In the Loop (MIL)
- Model Checking
- Theorem Proving
- Simulation
- Software Testing
- Model Driven Testing
- ...

Schedule

This seminar is arranged as a block seminar. The first meeting will take place at the end of the semester holidays or in the first week of the winter term. The actual block seminar will most probably take place in february 07. There will be deadlines in between that have to be met.

Topics

- Theorem Proving
- Model Checking - explicit
- Model Checking - symbolic
- Real-Time Model Checking
- Model Checking of Hybrid Systems
- Model-based Testing
- Statistical Analysis: Abstract Interpretation
- Statistic Tests: Reviews + Metrics
- Statistic Tests: Data-Flow-Analysis + Control-Flow-Analysis
- Dynamic Tests - Whitebox
- Dynamic Tests - Blackbox
- Model-in-the-Loop + Software-in-the-Loop
- Processor-in-the-Loop + Hardware-in-the-Loop
- Rapid Prototyping

Requirements

- Participation on all dates
- Getting familiar with your topic on your own
- Written elaboration of 15 pages / person using our template
- Presentation of 45 minutes (strict) / person
- Deadlines strict (You can send your files via email.):
 - additional literature and structure: Nov 6th 2006
 - written elaboration: Dec 18th 2006
 - slides: Jan 22nd 2007
- The elaboration and the slides must be composed by yourself only. All sources, additional aids and quotations must be indicated. Quotations must be distinguishable.

Documents

- [Slides of the first meeting](#)
- [Paper Template](#)

Contact

- [Dr.rer.nat. Bastian Schlich](#)
- Questions of general interest will be answered in the [forum](#).

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