

Internes Kolloquium

Am Montag, den 29. Februar 2016, um 16:15 Uhr hält

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im Rahmen seiner beabsichtigten Dissertation einen Vortrag mit dem Titel

Verification of Stochastic Systems by Stochastic Satisfiability Modulo Theories with Continuous Domain (CSSMT)

Der Vortrag findet im OFFIS, Escherweg 2, Raum F02 statt.

Abstract:

Stochastic Satisfiability Modulo Theories (SSMT) is a quantitative extension of classical Satisfiability Modulo Theories (SMT) inspired by stochastic logics. It extends SMT by the usual as well as randomized quantifiers, facilitating capture of stochastic game properties in the logic, like reachability analysis of hybrid-state Markov decision processes. Solving for SSMT formulae with quantification over finite and thus discrete domain has been addressed by Tino Teige et al.

In my PhD work, I consider extending their work to SSMT over continuous quantifier domains (CSSMT) in order to enable to capture of, e.g., continuous disturbances and uncertainty in hybrid systems. CSSMT extends the semantics of SSMT and introduces a corresponding solving procedure. My PhD work concentrate on the solving procedure and its soundness for CSSMT along with its algorithmic enhancements, the translation from stochastic hybrid systems to CSSMT formulae and their capability to analyse reachability properties are also considered as the main parts of my PhD work. Meanwhile, the corresponding CSSMT solver is implemented so that the CSSMT formulae can be encoded and solved automatically. Potential applications such as stochastic control problems, scheduling problems etc., are also pursued.

Betreuer: Prof. Dr. Martin Fränzle

Weitere Kolloquiumstermine sind im WWW abrufbar.