

UNIVERSITY OF SOUTH FLORIDA

Major Research Area Paper Presentation

Efficient Algorithms and Methods for Analyzing Probabilistic Models
by
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For the Ph.D. degree in Computer Science and Engineering

In order to model temporal stochastic behavior of systems, probabilistic formalisms such as Continuous Time Markov Chains (CTMCs) can be used. Model checking algorithms and probabilistic model checkers such as PRISM are developed to calculate the probability of well-defined properties on these models. Prominent probabilistic model checkers require the model's state-space to be finite and cannot be used to check infinite state models. Moreover, they don't produce a counterexample in case the property is refuted. This paper presents a Bounded Model Checking (BMC) framework that utilizes SMT-solving to analyze probabilistic models with infinite state-spaces. In case a property is refuted, this framework is able to return a relatively small counterexample, facilitating debugging of the model.

Wednesday, November 30th, 2022
1:00 PM
ENB 313 and [Microsoft Teams](#)

THE PUBLIC IS INVITED

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