

EINLADUNG

Zeit: Mittwoch, 30.11, 16:45 Uhr

Ort: E3, Raum 2359|222, Ahornstraße 55

Referent: Dr. Shahar Maoz

Titel: SYNTECH: Synthesis Technologies for
Reactive Systems Software Engineers

Abstract:

Reactive synthesis is an automated procedure to obtain a correct-by-construction reactive system from a given specification. Examples of these systems include the software controllers of robotic systems. Despite recent advancements on the theory and algorithms of reactive synthesis, e.g., efficient synthesis for the GR(1) fragment of linear temporal logic, many challenges remain in bringing reactive synthesis technologies to the hands of software engineers.

The SYNTECH project is about bridging this gap. It addresses challenges related to the change from writing code to writing specifications, and the development of tools to support a specification-centric rather than a code-centric development process.

We report on initial results from the SYNTECH project, including observations and case studies conducted to learn about the challenges of using GR(1) synthesis in the development of reactive robotic systems deployed and executed on real Lego NXT robots; novel techniques for detecting and debugging non-well-separated reactive specifications; the inclusion of well-known high-level specification patterns in efficient GR(1) synthesis; and a symbolic algorithm for a quantitative extension of reactive specifications with energy objectives.

Es laden ein: Die Dozenten der Informatik