



"سخنرانی های علمی"

پژوهشگاه دانشهای بنیادی
پژوهشکده علوم کامپیوتر

Building Dependable Cyberphysical Systems using Adaptive Timed Actors

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Abstract

In this presentation I will talk about models, techniques and tools that can be used to build dependable cyberphysical systems. A family of actor-based languages are introduced to enable model driven development and provide a faithful and usable model for building distributed, asynchronous, and event-based systems with least effort. Network and computational delays, periodic events, and required deadlines can be expressed in the model. Model checking and simulation tools are built based on the formal semantics of the language. For deadlock-freedom and schedulability analysis special efficient techniques in state space exploration is proposed by exploiting the isolation of method execution in the model. I will show how these models can be used in safety assurance and performance evaluation of different systems, like Network on Chip architectures, sensor network applications, Traffic Control systems, and quadcopters. I show a general pattern in track-based traffic control systems, and a framework where self-adaptive actors are used to address self-adaptive traffic control systems.

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مکان: فرمانیه - خ لواسانی - بعد از برج کوه نور - نبش خ فریین - پژوهشگاه دانشهای بنیادی

*** شرکت برای عموم علاقه مندان آزاد است ***