

Formal Verification of Physical Systems (FVPS-2018)

One of the main issues behind many failing systems is the ad-hoc verification approach that involves a variety of formalism and techniques for the modeling and analysis of various components of the present-age (cyber)-physical systems. For example, control and communication protocols are usually modeled using automata theory, and thus analyzed using model checking techniques, while the modeling of physical aspects often requires multivariate calculus foundations, which are in turn analyzed using paper-and-pencil based analytical proofs, simulation or theorem proving. The main focus of the FVPS-2018 was on the formal verification techniques for the modeling, analysis and verification of the safety and security critical cyber physical systems.

One keynote talk and four contributed papers have been accepted and presented at the workshop. The keynote talk provided an overview of various CPS formal verification approaches and associated challenges including model checking, automated and interactive theorem proving. The papers included discussed the reachability analysis for time-triggered hybrid systems, testing cyber-physical systems, formal modeling of robotic cell injection system and automated abstraction computation of hybrid systems.

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In: O. Hasan, S. Tahar, U. Siddique (eds.): Proceedings of the Workshop Formal Verification of Physical Systems (FVPS), Hagenberg, Austria, 17-Aug-2018, published at <http://ceur-ws.org>