

Formal Verification of Physical Systems (FVPS-2021)

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-2021 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 one contributed paper have been accepted and presented at the workshop. The keynote talk provided an overview about the role of formal methods, in particular temporal logic based run-time verification, in traffic safety diagnosis. The contributed paper surveyed the developments in the use of higher-order-logic theorem proving for transform methods based analysis and provided an overview of the corresponding real world case studies from the avionics, medicine and transportation domains that have been analyzed based on these developments..

In: O. Hasan, S. Tahar, A. Rashid (eds.): Proceedings of the Workshop Formal Verification of Physical Systems (FVPS), Timisoara, Romania, 30-Jul-2021, published at <http://ceur-ws.org>

© 2022 Copyright for this paper by its authors. Use permitted under Creative Commons License Attribution 4.0 International (CC BY 4.0).

CEUR Workshop Proceedings (CEUR-WS.org)