Digital Total - Computing & Data Science an der Universität Hamburg und in der Wissenschaftsmetropole Hamburg



Beitrag ID: 86 Beitragskennung: 62

Typ: Poster

Towards the Automatic Generation of Models for Prediction, Monitoring, and Testing of Cyber-Physical Systems

Modeling Cyber-Physical Systems (CPS) is a challenging task as they are composed of heterogeneous components that interact with each other and with the physical environment. This inherent complexity requires a high level of knowledge about the system and its environment when modeling CPS. We develop a framework for the automatic generation of models for CPS, which integrate into tools for prediction, monitoring, and testing. This framework employs machine learning techniques to learn models from data or simulation. To learn models of arbitrary application areas and different purposes, we use a modular approach that allows to support various learning techniques. This approach reduces the effort for designing, testing, and maintaining CPS in both research and industry settings.

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Keywords

modeling prediction monitoring testing CPS

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