Prof. Dr. Fabian Wirth

Lehrstuhl für Dynamische Systeme

UNIVERSITÄT
PASSAU

Fakultät für Informatik und Mathematik

Einladung zum Vortrag

von Herrn Prof. Dr. Majid Zamani (Technische Universität München) zum Thema

Lyapunov meets Church:

Automated synthesis of controllers

am Mittwoch, 21.06.2017, um 13:00 Uhr, in Raum (IM) SR 034

Abstract

Cyber-physical systems (CPS) are complex heterogeneous systems where software components interact tightly with physical ones. At the core of these systems there exists embedded control software playing a crucial role by monitoring and controlling the physical components. Although CPS have become widely present, the development of control software running on these systems is still ad hoc and error-prone.

In this talk, I will propose a transformative design process, in which the controller code is automatically synthesized from high-level correctness requirements in a provably correct fashion. The proposed solution is unifying techniques from discrete systems theory from computer science (initiated by Church) with continuous dynamical systems from control theory (initiated by Lyapunov).