



Vortragsankündigung im Rahmen des Regelungstechnischen Kolloquiums

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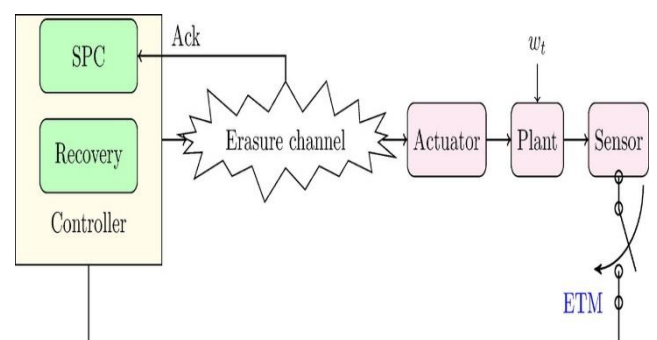
Donnerstag, 24. Mai 2018
in Raum P1.3.01 um 11:00 Uhr

hält Herr Prabhat Kumar Mishra, Indian Institute of Technology Bombay einen Vortrag über

Resource efficient stochastic predictive control for networked systems

Abstract:

This talk presents a resource efficient framework for a class of stochastic control systems that utilizes different state dependent control strategies in order to reduce the online computational load. When the states are in a certain vicinity of the nominal operating point, the controller is switched off, the actuator is relaxed, and data from the feedback channel is not transmitted. Beyond this vicinity, we pay close attention to the performance of the controller by adopting a stochastic predictive algorithm when the states are in a predefined comfort zone and activate a recovery algorithm beyond the comfort zone that secures good qualitative properties (possibly) irrespective of the performance. We demonstrate that under this framework, our proposed controller leads to mean square boundedness of the closed-loop states in the presence of stochastic noise, bounded control authority, and control channel erasures while entailing the dramatic reduction in traffic in both channels and computational resources.



Bio:

Prabhat K. Mishra is a Doctoral student at the Systems & Control Engineering Department, IIT Bombay, India. His doctoral study is supported by the Ministry of Human Resource and Development, India, and he received a Swiss Government Excellence Scholarship in 2017 to study at EPFL, Switzerland, for a year.

His research interests include optimization-based control, stochastic systems, and machine learning.