

Assistant (Student)

Development of NCSbench

Networked Control Systems, i. e. the interconnection of a control system over a communication network, are a fundamental building block of future industrial automation systems. To study NCS, the NCSbench platform [1,2] was developed allowing performance measurements of a real NCS. The platform is built using Lego, is developed in python, communicates over standard IP network interfaces and is fully open-source.

In order to further develop the platform, a working position is available.

[1] <https://github.com/tum-lkn/NCSbench/wiki>

[2] S. Zoppi, O. Ayan, F. Molinari; Z. Music, S. Gallenmüller, G. Carle, W. Kellerer, NCSbench: Reproducible Benchmarking Platform for Networked Control Systems. IEEE Consumer Communications & Networking Conference, 2020

Prerequisites

This work will consist of a significant amount of programming and also of processing the measurement data.

Requirements:

- Good knowledge of wireless systems and protocols (WLAN, WSN).
- Basic knowledge of LTI control systems.
- Strong C and Python programming skills.
- Experience with Linux systems is recommended.
- Experience with python data processing tools is beneficial.

Advisors

Samuele Zoppi