SUPER – Stuttgart University Program for Experiencing Research
Project Information

Institute’s Information
Name of Institute: Institute of Industrial Automation and Software Engineering (IAS)
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Duration of Project/Number of Students
June/July
June/July/August: X
Number of Students: 1

Name of Project: AI in Industrial Automation Systems
Beneficial Skills & Knowledge: Knowledge about information and automation technology

Description of Work
AI technologies are considered to have great potential for improving the quality of industrial production and reducing costs, while at the same time shortening production times and increasing the robustness of processes. Users also expect sustainability potential through resource savings, optimization of energy consumption and improved coordination of logistics processes. At the same time, artificial intelligence also allows ideas, product development, engineering, production and related processes to be redesigned from scratch, products and services to be enriched with AI. KI thus has implications for all areas of industry and thus also for industry 4.0. Today, large parts of industrial production already feature extensive, simple automation in certain tasks and areas, e.g. when processes are statically programmable and the design is always uniform. In the future, increasing demands on product variety, process flexibility or costs will make demands for more flexible and independent automation.

In IAS, we work on a conceptual method, which can be used for autonomous systems in industrial automation based on sensor technology, robotics and machine learning.

Task to be done:
In this work a theoretical and practical activity must be carried out. Throughout the theory, the basics and applications of machine learning algorithms in industrial automated systems must be explored. As part of the practical work, the student will work in an expert team on the creation of a dynamic simulation of a modular production system in IAS..