"Network Resource Management"
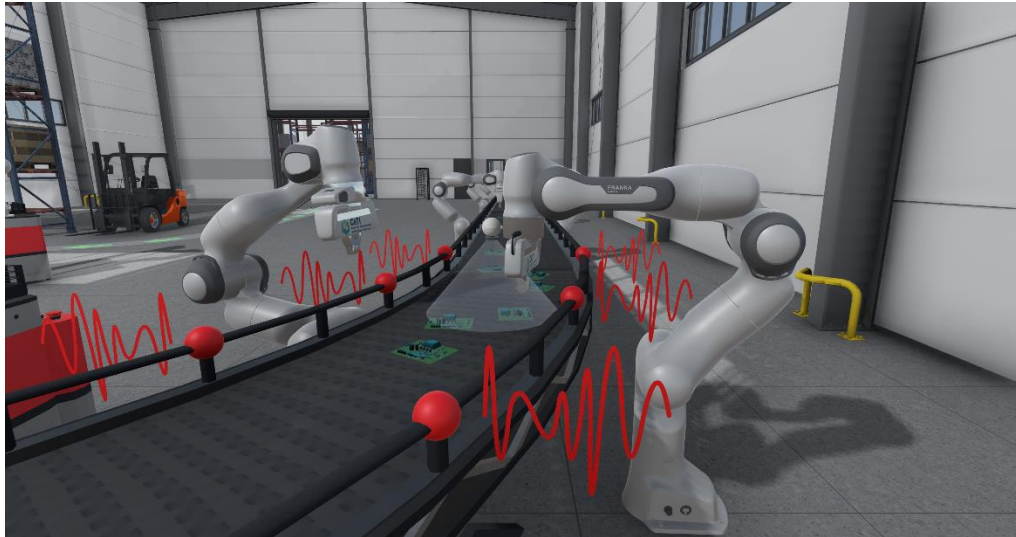
Project Topic in OS Kommunikationssysteme WS 2019/20

Summary: Nowadays, network devices are becoming increasingly high-performance. For applications with critical requirements, such as low-latency or broadband, one possibility is to process the data as it passes through network devices so that the end user achieves the desired result instead of raw data. To complete the above concept, network resources such as computing power, network bandwidth and transmission delay must be considered. On the other hand, the dependency of the individual computing units in the application and the dependency of the data are also important.

In this project a network simulator and a time-critical application with massive data will be given. The student should concentrate on the management of network resources for the respective application. The performance of several management strategies in the network, e.g. total latency, energy consumption, should be evaluated.

Components to learn: Network Simulator, Modelling, Network resource management

Requirements: Java, Python, Basic knowledge about networking and graph theory

Steps of the project to go through:

Learn about iFogSim and create a model of given application

State-of-art investigate of network resource placement strategy

Implement and evaluate the chosen strategies

Keywords: QoS, Resource management

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