

Thesis  
B.Sc.

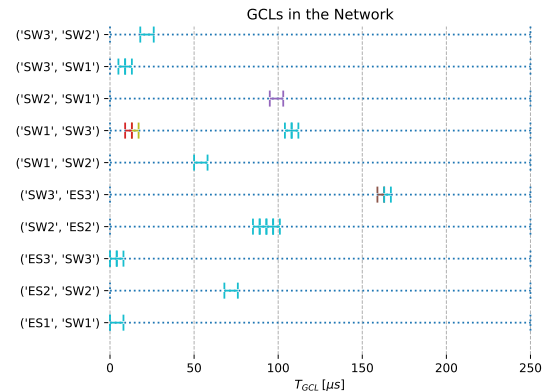
Thesis  
M.Sc.

IDP,  
Guided  
Research

# Machine-learning-based optimization of IEEE 802.1 Qbv Schedule Generation

## Motivation

Machine learning plays an increasingly important role in network design and management. Especially Time Sensitive Networking (TSN) network design and management requires optimization with high complexity. For example, the generation of flow schedules in IEEE 802.1 Qbv Time Aware Scheduling (TAS) can be formulated as an optimization problem which is NP-complete. The goal of this thesis is to reduce the wall clock time of the generation of such flow schedules. To this end we plan to use a machine-learning-based approach. Your task will be to decide on, implement, and evaluate the approach.



## Your Task

- Familiarize yourself with TSN and the Qbv standard
- Survey related work for suitable machine-learning-based approaches
- Implement a chosen approach and apply it to the schedule generation process
- Evaluate the performance of the approach compared to a baseline

## Requirements

- Hands-on experience with machine learning
- Ability to work with formal methods and optimization problems
- Basic knowledge of networking
- Self motivated work approach

## Contact

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