

Assistant (Student), Bachelor's Thesis, Forschungspraxis

# Development of an Evaluation Tool to Evaluate and Visualize Simulation Results of a Hybrid NoC Simulator

Enabled by ever decreasing structure sizes, modern System on Chips (SoC) integrate a large amount of different processing elements, making them Multi-Processor System on Chips (MPSoC). These processing elements require a communication infrastructure to exchange data with each other and with shared resources such as memory and I/O ports. The limited scalability of bus-based solutions has led to a paradigm shift to wards Network on Chips (NoC) which allow for multiple data streams between different nodes to be exchanged in parallel. A specific kind of NoC, specifically a hybrid TDM and packet-switched NoC, is evaluated with an in-house cycle-accurate simulation model. Processing, evaluating, and visualizing the results of such a simulation in a comprehensible manner is a difficult task in itself.

## Goal

The goal of this work is to develop a tool to evaluate, compare, and visualize the results of a simulation model of a hybrid TDM and packet-switched NoC.

## Prerequisites

To successfully complete this project, you should already have the following skills and experiences:

- Good programming skills in Python and JavaScript (or another programming language of your choice to create a GUI)
- At least basic knowledge of the functionality of NoCs
- Self-motivated and structured work style

## Learning Objectives

By completing this project, you will be able to

- Understand the concept of TDM NoCs
- Create and extend software tools to process, evaluate, and visualize large amounts of data in a comprehensible manner
- Document your work in form of a scientific report and a presentation

## Contact

Max Koenen  
Room N2118  
Tel. 089 289 23084  
max.koenen@tum.de

## Advisors

Max Koenen