Chair for Integrated Systems
TUM Department of Electrical and Computer Engineering
Technical University of Munich

TUM

Master's Thesis

LCS-based Task Scheduling in Heterogeneous Systems

Within our IPF project, we use rule-based RL to optimize runtime parameters (task mapping, DVFS) of MPSoCs.
At the current state, for task mapping it's only learned whether a task migration should be executed or not. The migration policy is non-adaptive and doesn't include information about the tasks or the abilities of a processing unit (core).

The goal of this thesis is to improve the current task migration mechanism in our IPF platform. This one should be especially adapted to heterogeneous MPSoCs and therefore include the before mentioned information in its policy. Additionally, the learning engines should actively decide which task is going to be migrated.

Therefore, different scheduling methods should be investigated based on a literature study. Afterwards simulations will be done in Matlab, before implementing one approach in HW and evaluate its applicability.

Advisors

Florian Maurer