



To whom it may concern,

I have been working as the supervisor of Mr. Jakub Kopřiva since June 2014 during which he has worked towards the completion of his diploma thesis entitled „Algorithms for Mapping and Scheduling Real-Time Streaming Applications on Heterogeneous Multi-core Platforms“. This has been done partly as regular semester work, but the group has additionally funded an extra 200 hours of work during the summer of 2014 to further advance the research described in the thesis. This time was productively spent reading related work, implementing and benchmarking the integer linear programming (ILP) formulation that was used as a baseline, and write some initial documentation. Given that the baseline was implemented by the end of the summer, the main work of the thesis has focused on improving its scalability to deal with systems and applications of realistic complexity.

The resulting diploma thesis contains sound approaches to the considered problem. Some simple improvements are first implemented to the baseline ILP to improve its performance. Then, lazy constraints and symmetry breaking are proposed to reduce the computation time of the solver. Lastly, the impact of different solver settings on the computation time were evaluated.

The thesis is generally complete and the structure is good. The use of English is not perfect, although I appreciate that Mr. Kopřiva accepted the added challenge of writing his thesis in a foreign language. In terms of contents, the text could benefit from further clarifications to avoid misunderstandings and to make the work more accessible to unfamiliar readers. The quality and quantity of the work is considered sufficient for a diploma thesis, although there could be more contributions given the time allotted for the project. However, the work provides a good starting point for further research in this area.

My experience with Mr. Kopřiva is that he is pleasant to work with. He is structured and capable of working with research quite independently. He demonstrated ability to quickly learn the basics of data-flow models and their associated analysis techniques, as well as how to map and schedule them on heterogeneous multi-core systems. In particular, he proved skilled in implementation, both with respect to the implementation of the baseline ILP and the framework used for experimentation.

To conclude, I recommend giving this diploma thesis the mark C - good.

Yours sincerely,

Dr. Benny Akesson, MSc

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