Plan Reordering and Parallel Execution – A Parameterized Complexity View

Meysam Aghighi and Christer Bäckström
presented by: Olov Andersson

Linköping University

{*meysam.aghighi,christer.backstrom*}*@liu.se*

February 6, 2017

Abstract

We reconsider the optimization problems for partial-order and parallel plans previously studied by Bäckström (JAIR, 1998), but use parameterized complexity to get a more fine-grained picture. Problems we study include the following:

- Can we deorder/reorder the actions of a plan optimally?

- What is the optimal parallel execution length of a plan?

Plan reordering: to change the order of actions while keeping the plan valid.

- We also use minimum parallel execution length of a partial-order plan as a criterion for plan optimization; i.e can we reorder a plan to decrease its parallel execution length?