

Concept Chapter3 Chapter 3. Concept

From a high point of view SPolly is divided into a speculative loop parallelizer and a non speculative extension to Polly. Even if the objectives for both parts are the same, namely to improve the performance of loops, the actions to accomplish them are different. While the former one will introduce speculative parallelism for promising loops at runtime, the later one tries to weaken the harsh requirements on SCoPs in order to make Pollys loop optimizations applicable on a wider range of loop nests. In the presented setting both approaches may benefit from the polyhedral optimizations and also from parallel execution, so it is hardly surprising that the polyhedral analyses play a decisive role. On the one hand they reveal loop nests which may be optimized by Polly, with or without the extensions of SPolly, on the other hand they are used to detect promising loops to speculate on. Apart from the implementation work, which will be described in the next chapter, immense effort has been made on the concepts and key ideas behind. We believe that these ideas and the knowledge gained during the work is very valuable not only for future work on SPolly or one of its bases but also for other approaches facing similar situations.

SPolly In A Nutshell

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