

Design patterns matching parallel benchmarks

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Abstract

Algorithmic skeletons (first) and parallel design patterns (later on) have always been claimed to be suitable tools to improve efficiency of parallel programmers. Quite a number of prototype programming frameworks have been developed exploiting these concepts. The actual features of all these frameworks have traditionally been demonstrated using different kind of kernels/applications. However, no real benchmark set has been developed to prove properties of algorithmic skeletons or design pattern based frameworks. We will show how standard parallel benchmark sets may be used to stress and assess algorithmic skeleton and parallel design pattern based frameworks and how the adoption of structured parallel programming model *de facto* improves programmability, decreases design and development time and actually supports levels of performance perfectly comparable with those achieved using more traditional programming frameworks. In particular, during the talk we'll present recent results achieved using PARSEC benchmarks implemented on top of FastFlow and SKEPU frameworks.