ΔΙΑΛΕΞΗ

"Non-blocking operations in GraphBLAS: tradeoffs and performance"

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Θα μεταδοθεί διαδικτυακά μέσω MS Teams
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Περίληψη – Abstract

GraphBLAS is a recent standard that allows expression of graph algorithms in the language of linear algebra and enables easy code parallelization and optimization. Programs executed with our GraphBLAS implementation are automatically vectorized and parallelized by choosing, at compile-time, one of the available backends for shared and/or distributed memory. In this talk, we present the design of a new backend for shared memory systems that aims at improving data locality by executing GraphBLAS operations in a non-blocking fashion. The GraphBLAS API remains the same, and the non-blocking backend achieves faster execution of programs as a result of better data locality. The non-blocking backend exploits lazy evaluation and dynamic parallelism to group together the execution of operations that reuse data in cache. A preliminary evaluation of the non-blocking backend shows promising results for various datasets of two algorithms written in GraphBLAS.

Aristeidis Mastoras is a Postdoctoral Researcher at Huawei Zurich Research Center. He holds a doctoral degree from ETH Zurich, and he received a four-year first degree and an MSc degree from the Department of Computer Science, University of Ioannina. His research interests include the design and implementation of techniques for parallel and distributed systems, the design of parallelization abstractions and parallel programming models, and the development of compilers for automatic parallelization. The research work of Aristeidis Mastoras has been published in international conferences and scientific journals in the area of Parallel and Distributed Systems.

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Η διάλεξη θα γίνει διαδικτυακά