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Title

Title: Assessing the Performance Impact of an Active Global Address Space: A case for AGAS

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Biography:

Parsa Amini is a PhD student of Computer Science at Louisiana State University. He is a member of the STEllAR Group at the Center of Computation and Technology at Louisiana State University. His current research is focused on working on analysis and improvement of the HPX library, design and implementation of Phylanx, for the purpose of implementing neural networks with HPX, and related tools.

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Biography:

Dr. Hartmut Kaiser is an Adjunct Professor of Computer Science at Louisiana State University. At the same time, he holds the position of a senior scientist at the Center for Computation and Technology (LSU). He received his doctorate from the Technical University of Chemnitz (Germany) in 1988. He is probably best known through his involvement in open source software projects, mainly as the author of several C++ libraries he has contributed to Boost, which are in use by thousands of developers worldwide. He is a voting member of ISO C++ Standards Committee. His current research is focused on leading the STEllAR group at CCT working on the practical design and implementation of the ParalleX execution model and related programming methods. In addition, he architected and developed the core library modules of SAGA for C++, a Simple API for Grid Applications.

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Abstract

Abstract (Maximum 250 words):

In this research, we describe the functionality of AGAS, a subsystem of the HPX runtime system that is designed to handle data, independent of the hardware and architecture configuration. AGAS enables runtime global data access and data migration, but incurs a an overhead cost at runtime. We present a method to assess the performance of AGAS and the amount of impact it has on execution of the OctoTiger application. With our assessment method we identify three problematic spots in the HPX version used in our experiments. We also demonstrate that the overhead caused by AGAS is low.

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