Scientific Computing

CBC Seminar on High-Performance Parallel Programming in Python - June 4, 2012

Dr. Aron Ahmadia from KAUST will hold a tutorial on Parallel Programming in Python June 4 at 13:00 in Storstua. The tutorial is aimed at a broad audience, and is open for all that are interested to know more about this topic.

High-Performance Parallel Programming in Python

Dr. Aron Ahmadia, KAUST

Total number of participants: 15
Total number of guests outside of CBC: 7
Number of different nationalities represented: 4
Total number of speakers: 1
Total number of talks: 1

Scientists will from a productivity point of view like to build their applications in Python, yet with the possibility to utilize large-scale parallel computers and to experience efficiency comparable to applications written entirely in a compiled language. Dr. Ahmadia will in this workshop discuss the design and implementation of pyclaw, which demonstrates the solution of hyperbolic partial differential equations using high-performance, parallel programming in Python. Pyclaw builds on petsc4py and the classic Clawpack software in Fortran to offer the application scientist a flexible and powerful interface to solve hyperbolic partial differential equations. For example, pyclaw has been applied to study challenging wave phenomena with parallel efficiency approaching 90% on 65,536 cores of Shaheen, the KAUST IBM BlueGene/P supercomputer.

About the speaker

Dr. Ahmadia is a Computational Scientist at the Supercomputing Laboratory at King Abdullah University of Science and Technology (KAUST). He works at the intersection of applied mathematics, software engineering, and application domains as diverse as adaptive optics, semiconductor lithography, and ice-sheet modeling. His focus is in the collaborative development of robust, reproducible, and scalable software tools for computational science.

High-Level Programming Techniques
Efficient Collective File System Interfaces at the Petascale
Hyperbolic Partial Differential Equations
Synthetic PPC450D Assembly for Generation and Optimization

New Optimization Methods and Applications
Numerical Time Integrators
Mask Initialization in Semiconductor Lithography
Synthetic Assembly Kernels

What	▪ Workshop
When	Jun 04, 2012 from 01:00 PM to 02:00 PM
Where	Storstua @ Simula
Contact Name	Hans Petter Langtangen
Attendees	Aron Ahmadia Carsten Griwodz Dag Sverre Seljebotn Glenn T. Lines Heidi-C. Bernhoff-Jacobsen Ida Drøsdal Johan Hake Johannes Ring Joris Verschaeve Kent-Andre Mardal Martin Alnæs Preben N. Olsen Wei Zhang Xing Cai Yapi Donatien Achou
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