informatik-Kolloquium

Der Fachbereich Informatik der Johannes Kepler Universität Linz[1] lädt in Zusammenarbeit mit der Österreichischen Gesellschaft für Informatik (ÖGI) zu folgendem Vortrag ein:

Thomas Ponweiser
Risc Software

Optimization of Scientific Applications in High Performance Computing

Thursday, May 28, 5:15 pm,
Room JKU S3-055 in Science Park 3,

Abstract:
The tremendous computational power of today's largest supercomputers offers great possibilities for scientific applications. Nowadays, high performance computer simulations are well-established and are in fact the key to new and ground-braking insights in scientific domains such as Astrophysics, Quantum Mechanics, Climatology, Particle Physics and many more. However in practice, exploiting the huge potential of supercomputers is challenging and requires a lot of computational engineering know-how and experience. In particular, knowledge about modern parallel programming paradigms as well as experience with tools for debugging and profiling distributed applications running on thousands of CPUs is essential.

This talk will provide an overview about the current state-of-the-art with respect to programming, profiling and optimizing applications in High Performance Computing (HPC). Based on examples coming from the optimization work on real-world scientific simulation codes, we will discuss strategies for profiling and tuning massively parallel applications, as well as some important aspects to consider, when developing such applications. The talk will close with an outlook on future trends in HPC and corresponding open challenges posed to computer science.

Short Bio:
Thomas Ponweiser has studied Technical Mathematics with focus on Mathematics in Computer Science at the Vienna University of Technology (TU Wien). Since 2011, he is working at RISC Software GmbH as a Software Developer. Within the EU Project PRACE (http://prace-ri.eu) , he is engaged in the field of High Performance Computing (HPC) with the optimization of scientific simulation codes with respect to performance and scalability in close collaboration with European domain scientists.

Univ.-Prof. Dr. Volker Strumpen
Institute for Computer Architecture

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[1] Der Fachbereich (http://informatik.jku.at) besteht aus folgenden Instituten:
Application Oriented Knowledge Processing (FAW), Bioinformatics, Computational Perception, Computer Architecture, Applied Systems Research and Statistics, Computer Graphics, Formal Models and Verification, Networks and Security, Integrated Circuits, Pervasive Computing, Software Systems Engineering, System Software, Telecooperation, Signal Processing