

Kolloquium Angewandte Informatik

Multi-Objective Evolutionary Algorithm on GPGPU

Dr. Deepak Sharma

Assistant Professor,
Department of Mechanical Engineering,
Indian Institute of Technology Guwahati,
Assam, India

Abstract:

In the last two decades, the field of multi-objective optimization (MOO) has attracted researchers and practitioners to solve real world problems using evolutionary algorithms. For solving many-objective problems, a very large population is often required which takes time to both rank and evaluate. One of the remedies to reduce computation time is to perform evaluations in parallel. In recent years, an advent of massively parallel computing on general purpose graphic processing units (GPGPU) allows us to perform parallel computation on hundreds of threads. Now, a GPGPU card is an affordable commodity and can be used for scientific computing. In this talk, a GPGPU-compatible archive-based stochastic ranking evolutionary algorithm (G-ASREA) for MOO is discussed. Simulation results of G-ASREA show that it is approximately 5000 times faster than existing multi-objective evolutionary algorithms and approximately 15 times faster than serial versions of the archive-based stochastic ranking evolutionary algorithm.

Termin: Freitag, 7. Juni 2013, 14:00 Uhr

Ort: Englerstraße 11, 76131 Karlsruhe
Kollegiengebäude am Ehrenhof (Geb. 11.40), 2. OG, Raum 231
(Hinweise für Besucher: www.aifb.uni-karlsruhe.de/Allgemeines/Besucher)

Veranstalter: Institut AIFB, Forschungsgruppe Effiziente Algorithmen

Zu diesem Vortrag lädt das Institut für Angewandte Informatik und Formale Beschreibungsverfahren alle Interessierten herzlich ein.

Andreas Oberweis, Hartmut Schmeck (Org.), Detlef Seese, Wolfried Stucky, Rudi Studer, Stefan Tai