

MATS BRORSSON

WWW: <http://web.it.kth.se/~matsbror>

Curriculum Vitae, Dec 11, 2008

Professor in Computer Architecture

- Research in power-aware computer architectures and in parallel computer systems
- Teaching undergraduate and graduate courses in computer engineering, computer architecture and parallel computer systems
- Programme director of MSc in engineering programme in Information and Communication Technology
- Vice dean of education at KTH School of Information and Communication Technology

Employments

- Royal Institute of Technology, 2000 - present: Professor in Computer Architecture
- Lund University, 1995 - 2000
- Lund University, 1992 - 1995: Assistant Professor
- Lund University, 1991 - 1992: Research Assistant (Ph.D. student)
- Telesoft AB, 1989 - 1991, Systems engineer
- Lund University, 1985 - 1989, Research Assistant

Education

- Ph.D. in Computer Systems Engineering, Lund University 1994, Thesis title: *Performance Impact of Shared Memory Latency in Multiprocessors - Models and Experiments*. Thesis advisors: Professors Lars Philipson and Per Stenström
- Master of Science in Electrical Engineering, Lund University, 1985

Longer visits abroad (more than two weeks)

- Visiting professor at Fudan university, PR China, 2007-10-17—2007-11-23
- Visiting research associate at Computer Systems Research Institute, University of Toronto, Toronto, Canada. 1996-02-28 - 1996-08-10.
- Visiting scientist at IBM T.J. Watson Reseach Center, Hawthorne, New York, USA. 1988-10-10 - 1989-05-26.

Scientific publications since 2000

Refereed journal contributions

1. S. Karlsson and M. Brorsson. Priority based messaging for software distributed shared memory. *Cluster Computing*, 6(2):161-169, Apr 2003.
2. C. Brunschen and M. Brorsson, OdinMP/CCp – A Portable Implementation of OpenMP for C, *Concurrency: Practice and Experience*, 12: 1193-1203, 2000.

Refereed conference and/or Workshop contributions

1. M. Collin and M. Brorsson, Two-level Dictionary Code Compression: a New Scheme to Improve Instruction Code Density of Embedded Applications, in *Proceedings of the 2009 International Symposium on Code Generation and Optimization*, Seattle, March 22-25, 2009. (to appear)
2. M. Collin and M. Brorsson, Improving Code density of Embedded Software using a 2-level Dictionary Code Compression Architecture, in *Proceedings of the 13th IEEE Asia-Pacific Computer Systems Architecture Conference*, 2008.
3. M. Nikitovic, T. de Schampeleire, and M. Brorsson, A Study on Periodic Shutdown for Adaptive CMPs in Handheld Devices, in *Proceedings of the 13th IEEE Asia-Pacific Computer Systems Architecture Conference*, 2008.
4. M. Brorsson and M. Collin, Adaptive and Flexible dictionary code compression for embedded applications, in *Proceedings of the 2006 international conference on Compilers, Architecture, and Synthesis for Embedded Systems (CASES'06)*.
5. M. Nikitovic, and M. Brorsson, A Low Power Strategy for Future Mobile Terminals, in DATE'04, in *Proceedings of the conference on Design, automation and test in Europe-Volume 1*, 2004.
6. M. Nikitovic, and M. Brorsson, A Multiprogrammed Workload Model for Energy and Performance Estimation of Adaptive Chip-Multiprocessors. in *Proceedings of the 18th International Parallel and Distributed Processing Symposium (IPDPS'04)*, pp. 251
7. S. Karlsson, S.-W. Lee, and M. Brorsson. A fully compliant OpenMP implementation on software distributed shared memory. In *Proceedings of the 2002 International Conference on High Performance Computing (HiPC'02)*, Dec 2002.
8. M. Nikitovic and M. Brorsson. An adaptive chip-multiprocessor architecture for future mobile terminals. In *Proceedings of the 2002 International Conference on Compilers, Architecture, and Synthesis for Embedded Systems (CASES'02)*, Oct 2002.
9. N.-T. Nguyen-Phan and M. Brorsson. Memory utilization in software DSM for embedded systems. In *Proceedings of the 2002 International Conference on Parallel and Distributed Processing Techniques and Applications (PDPTA'02)*, Jun 2002.
10. M. Brorsson. MipsIt-a simulation and development environment using animation for computer architecture education. In *Proceedings of 2002 Workshop on Computer Architecture Education*, pages 65-72, May 2002. Anchorage, Alaska.
11. E. Ayguadé, M. Brorsson, H. Brunst, H.-C. Hoppe, S. Karlsson, X. Martorell, W.E. Nagel, F. Schlimbach, G. Utrera and M. Winkler, OpenMP Performance Analysis in the INTONE Project, in *Proceedings of EWOMP'2001*, Barcelona, September 8-9, 2001.

12. S. Karlsson and M. Brorsson, Priority Based Messaging for Software Distributed Shared Memory — Model and Implementation, in *Proceedings of CAC'01, Workshop on Communication Architecture for Clusters*, San Francisco, April 27, 2001.

Student supervision

Fomer PhD students

Sven Karlsson, PhD KTH 2004, Thesis title: *Shared memory and OpenMP on Clusters: Performance Aspects, Compilers Methods and Run-time systems*.

Current PhD students

Mikael Collin Low-power computer architectures, Expected to graduate 2008

Mladen Nikitovic Low-power computer architectures, Expected to graduate 2008

MSc students

I have supervised over 50 MSc degree projects. For an up-to-date list please see the URL below:

http://web.it.kth.se/~matsbror/Brorsson_exjobb.html

Professional activities

Program committees

- Workshop on Programmability issues for Multicore computers (MULTIPROG), 2008-2009.
- IPDPS'09, IEEE International Parallel and Distributed Processing Symposium 2009.
- HiPEAC'08, International Conference on High Performance Embedded Architectures & Compilers 2008
- Workshop on Computer Architecture Education, 2004-2008
- 4th international conference on Computing Frontiers, 2007
- 20th ACM International Conference on Supercomputing, 2006
- MEDEA Workshop, 2000-2004
- EWOMP'99-04, European Workshop on OpenMP, 1999-2004. Organiser at 1999 and 2004.
- 2002 International Conference on Parallel Processing (ICPP'2002).
- WOMPAT 2000-2001: Workshop on OpenMP Applications and Tools
- International Workshop on OpenMP: Experiences and Implementations, October 18, 2000, Tokyo, Japan
- 12th International Conference on Computer Applications in Industry and Engineering (CAINE-99)

Education and University administration

- Since 2005 Vice dean of education at KTH School of Information and Communication Technology. The school has about 2000 full-time students from more than 66 different countries.

- Between 2002 and 2008 programme director of MSc in engineering programme in Information and Communication Technology
- Between 2001-2002 head of Laboratory of Electronic and Computer Systems at the department of Microelectronics and Information Technology at KTH. The laboratory consists of about 30 faculty and 40 PhD students.
- Member of undergraduate education committee to provide council to the faculty board of KTH (GRU-utskottet)
- Member of elected faculty assembly at KTH (Fakultetskollegium)
- Director of Undergraduate studies in Computer Systems Engineering at the Department of Information Technology at Lund University, 1998-2000.
- Project leader for the development of a web based system to handle the administration of all undergraduate courses at the faculty of engineering at Lund University. The system is used by students (>6000 users), departmental staff (>100 users), course evaluators (~10 users) and the central administration (~20 users). URL: <http://www.ka.lth.se>
- Member of the technical evaluation board for Lunarc, a center for scientific and technical computing in the areas of Computational Chemistry, Computational Mechanics, and Computational Physics at Lund University. URL: <http://www.lunarc.lu.se>