Sven Karlsson - DTU Orbit (01/01/2018)

Karlsson, Sven  
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Department of Applied Mathematics and Computer Science - Associate Professor  
Embedded Systems Engineering

Publications:

**High Performance with Prescriptive Optimization and Debugging**  
Publication: Research › Ph.D. thesis – Annual report year: 2017

**Improving Loop Dependence Analysis**  
Publication: Research - peer-review › Journal article – Annual report year: 2017

**An Adaptive Middleware for Improved Computational Performance**  
Publication: Research › Ph.D. thesis – Annual report year: 2016

**A scalable lock-free hash table with open addressing**  
Publication: Research - peer-review › Article in proceedings – Annual report year: 2017

**Towards Unifying OpenMP Under the Task-Parallel Paradigm Implementation and Performance of the taskloop Construct**  
Publication: Research - peer-review › Article in proceedings – Annual report year: 2015

**Experiences with Compiler Support for Processors with Exposed Pipelines**  
Publication: Research - peer-review › Article in proceedings – Annual report year: 2015

**A Scalable Prescriptive Parallel Debugging Model**  
Publication: Research - peer-review › Article in proceedings – Annual report year: 2015

**Hardware Transactional Memory Optimization Guidelines, Applied to Ordered Maps**  
Publication: Research - peer-review › Article in proceedings – Annual report year: 2015

**A Synthesizable Multicore Platform for Microwave Imaging**  
Publication: Research - peer-review › Article in proceedings – Annual report year: 2014

**Automatic generation of application specific FPGA multicore accelerators**  
Code Commentary and Automatic Refactorings using Feedback from Multiple Compilers
Publication: Research - peer-review › Article in proceedings – Annual report year: 2014

Collaborative Compiler Vectorization
Jensen, N. B., Probst, C. W. & Karlsson, S. 2014
Publication: Research › Poster – Annual report year: 2014

Compiler Feedback using Continuous Dynamic Compilation during Development
Publication: Research - peer-review › Article in proceedings – Annual report year: 2014

DySectAPI: Scalable Prescriptive Debugging
Publication: Research - peer-review › Poster – Annual report year: 2014

ELB-trees - Efficient Lock-free B+trees
Publication: Research › Poster – Annual report year: 2014

Exposing MPI Objects for Debugging
Publication: Research - peer-review › Poster – Annual report year: 2014

Exposing MPI Objects for Debugging
Publication: Research - peer-review › Conference abstract for conference – Annual report year: 2014

Hardware Realization of an FPGA Processor - Operating System Call Offload and Experiences
Hindborg, A. E. & Karlsson, S. 2014
Publication: Research › Poster – Annual report year: 2014

Hardware Realization of an FPGA Processor - Operating System Call Offload and Experiences
Publication: Research - peer-review › Conference abstract in proceedings – Annual report year: 2014

Hardware Realization of an FPGA Processor - Operating System Call Offload and Experiences
Publication: Research - peer-review › Article in proceedings – Annual report year: 2015
Library Support for Resource Constrained Accelerators
Publication: Research - peer-review › Article in proceedings – Annual report year: 2014

Library Support for Resource Constrained Accelerators
Brock-Nannestad, L. & Karlsson, S. 2014
Publication: Research - peer-review › Poster – Annual report year: 2014

MPI Debugging with Handle Introspection
Publication: Research - peer-review › Paper – Annual report year: 2014

Performance Aspects of Synthesizable Computing Systems
Publication: Research › Ph.D. thesis – Annual report year: 2014

Safe Asynchronous System Calls
Brock-Nannestad, L. & Karlsson, S. 2014
Publication: Research - peer-review › Poster – Annual report year: 2014

Safe Asynchronous System Calls - extended abstract
Brock-Nannestad, L. & Karlsson, S. 2014
Publication: Research - peer-review › Conference abstract for conference – Annual report year: 2014

Smart Multicore Embedded Systems
Publication: Research - peer-review › Book – Annual report year: 2014

Testing Infrastructure for Operating System Kernel Development
Publication: Research - peer-review › Article in proceedings – Annual report year: 2014

Unit Testing Framework for Operating System Kernels
Walter, M. & Karlsson, S. 2014
Publication: Research - peer-review › Conference abstract for conference – Annual report year: 2014

Unit Testing Framework for Operating System Kernels
Walter, M. & Karlsson, S. 2014
Publication: Research - peer-review › Poster – Annual report year: 2014

ELB-trees an efficient and lock-free B-tree derivative
Publication: Research - peer-review › Article in proceedings – Annual report year: 2013

ELB-trees - Efficient Lock-free B+trees
Publication: Research › Poster – Annual report year: 2014

Synthetic Aperture Radar Data Processing on an FPGA Multi-Core System
Task Based Programming on Embedded Multicores
Schleuniger, P. & Karlsson, S. 2013
Publication: Research › Poster – Annual report year: 2014

Design Principles for Synthesizable Processor Cores
Publication: Research - peer-review › Article in proceedings – Annual report year: 2012

Guiding Programmers to Higher Memory Performance
Publication: Research - peer-review › Article in proceedings – Annual report year: 2012

Parallelizing More Loops with Compiler Guided Refactoring
Publication: Research - peer-review › Article in proceedings – Annual report year: 2012

Software Managed Cache for Parallel Systems
Schleuniger, P. & Karlsson, S. 2012
Publication: Research › Poster – Annual report year: 2014

Adapt or Become Extinct!: The Case for a Unified Framework for Deployment-Time Optimization
Publication: Research - peer-review › Article in proceedings – Annual report year: 2011

Automatic Loop Parallelization via Compiler Guided Refactoring
Publication: Research › Report – Annual report year: 2011

Comparing the Overhead of Lock-based and Lock-free Implementations of Priority Queues
Publication: Research - peer-review › Article in proceedings – Annual report year: 2011

Compiler Driven Code Comments and Refactoring
Publication: Research - peer-review › Article in proceedings – Annual report year: 2011

Efficient Co-Simulation of Multicore Systems
Publication: Research - peer-review › Article in proceedings – Annual report year: 2011

Efficient Co-Simulation of Multicore Systems
Publication: Research - peer-review › Article in proceedings – Annual report year: 2011
Expressing Coarse-Grain Dependencies Among Tasks in Shared Memory Programs
Publication: Research - peer-review › Journal article – Annual report year: 2011

Feedback Driven Annotation and Refactoring of Parallel Programs
Publication: Research › Ph.D. thesis – Annual report year: 2011

Hardware Support for Dynamic Languages
Publication: Research - peer-review › Article in proceedings – Annual report year: 2011

Improving Performance of Software Implemented Floating Point Addition
Hindborg, A. E., Passas, S. & Karlsson, S. 2011
Publication: Research - peer-review › Poster – Annual report year: 2011

Improving Performance of Software Implemented Floating Point Addition
Publication: Research - peer-review › Article in proceedings – Annual report year: 2011

SRC: FenixOS - A Research Operating System Focused on High Scalability and Reliability
Publication: Research - peer-review › Article in proceedings – Annual report year: 2011

Towards a Time-predictable Dual-Issue Microprocessor: The Patmos Approach
Publication: Research - peer-review › Article in proceedings – Annual report year: 2011

Support for Programming Models in Network-on-Chip-based Many-core Systems
Publication: Research › Ph.D. thesis – Annual report year: 2010

Compiler Driven Code Comments and Refactoring
Publication: Research - peer-review › Article in proceedings – Annual report year: 2010

Expressing Inter-task Dependencies between Parallel Stencil Operations
Publication: Research - peer-review › Article in proceedings – Annual report year: 2010

High Performance Triangle versus Box Intersection Checks
Christensen, T. & Karlsson, S. 2010 Proceedings of Workshop on Parallel Programming and Applications on Accelerator Clusters (PPAAC).
Publication: Research - peer-review › Article in proceedings – Annual report year: 2010
Tinuso: A processor architecture for a multi-core hardware simulation platform
Publication: Research › Article in proceedings – Annual report year: 2010

Adaptable Support for Programming Models in Many-core Architectures
Publication: Research - peer-review › Conference abstract in proceedings – Annual report year: 2009

Identifying Inter-task Communication in Shared Memory Programming Models
Publication: Research - peer-review › Article in proceedings – Annual report year: 2009

Parallelism and Scalability in an Image Processing Application
Publication: Research - peer-review › Conference article – Annual report year: 2009

Performance Analysis of a Hardware/Software-based Cache Coherence Protocol in Shared Memory MPSoCs
Publication: Research - peer-review › Article in proceedings – Annual report year: 2009

Exploiting spatial parallelism in Ethernet-based cluster interconnects.
Publication: Research - peer-review › Article in proceedings – Annual report year: 2008

Parallelism and Scalability in an Image Processing Application
Publication: Research - peer-review › Article in proceedings – Annual report year: 2008

MultiEdge: An Edge-based Communication Subsystem for Scalable Commodity Servers
Publication: Research - peer-review › Article in proceedings – Annual report year: 2007

Projects:

Principles for Scalable Many-core Operating Systems
Walter, M., Karlsson, S. & Probst, C. W.
15/01/2014 → 12/01/2018
Project: PhD

Cognitive and Perceptive Cameras - System software and execution platform
Hindborg, A. E., Karlsson, S. & Probst, C. W.
01/11/2013 → 30/11/2015
Project: PhD

Cognitive and Perceptive Cameras - Compilation system
Jensen, N. B., Probst, C. W., Karlsson, S., Lluch Lafuente, A., Kessler, C. W. & Sestoft, P.
01/10/2013 → 18/01/2017
Project: PhD

Test-driven model-based development of complex embedded systems
Munck, A., Madsen, J., Lindqvist, L., Mortensen, R., Pop, P., Karlsson, S., Larsen, P. G. & Nielsen, P. Ø.
01/08/2013 → 16/08/2017
Portable and predictable Performance Heterogeneous Embedded Manycores - Low Level System Stack
Brock-Nannestad, L., Karlsson, S., Probst, C. W., Madsen, J., Broxsson, M. & Själander, M.
15/01/2013 → 01/12/2016
Project: PhD

Portable and Predictable Performance Heterogeneous Embedded Manycores - Upper Level System stack
01/10/2012 → 21/01/2016
Project: PhD

Architecture concepts for improving programmability of multi-core architectures
Schleuniger, P., Karlsson, S., Madsen, J., Pop, P., Grahn, H. & Ramirez, A.
15/06/2010 → 26/05/2014
Project: PhD

Adaptable communication middleware for network on a chip based multi core architectures
Passas, S., Karlsson, S. & Madsen, J.
01/10/2009 → 09/04/2013
Project: PhD

Tools for model-based software descriptions
Larsen, P., Karlsson, S., Probst, C. W., Cohen, A. & Stenström, P.
01/02/2007 → 31/08/2011
Project: PhD

Systemarkitekturer baseret på Network-on-Chip
Rasmussen, M. S., Sparsø, J., Karlsson, S., Madsen, J., Probst, C. W., Grahn, H. & Nurmi, J. A.
01/10/2006 → 29/09/2010
Project: PhD

Activities:

HIPEAC - European Network of Excellence on High Performance and Embedded Architecture and Compilation (External organisation)
Karlsson, S. (Participant)
27 Jan 2008 → 31 Dec 2015
Activity: Membership › Membership of research networks or expert groups