Simon Holmbacka. PhD – Publications

Contact Information

Embedded Systems Laboratory
Faculty of Science and Engineering
Åbo Akademi University, Finland

Tammikalliontie 1
20900
Turku
Finland
Tel: +358 50 5310467
Email: sholmbac@abo.fi

Thesis

Simon Holmbacka: *Energy Aware Software for Many-Core Systems*, Faculty of Science and Engineering, Åbo Akademi University, 2015, Turku, Finland

Publications – Journals (5)

Simon Holmbacka, Dražen Lučanin , Ilia Pietri, Ivona Brandic, Johan Lilius, Rizos Sakellariou: *Performance-Based Pricing in Multi-Core Geo-Distributed Cloud Computing*, *IEEE Transactions on Cloud Computing*, IEEE 2016

Simon Holmbacka, Jörg Keller, Patrick Eitschberger, Johan Lilius: *Accurate Energy Modeling for Many-Core Static Schedules with Streaming Applications*, *Microprocessors and Microsystems, Elsevier*, 2016

Simon Holmbacka, Erwan Nogues, Maxime Pelcat, Sébastien Lafond, Daniel Menard, Johan Lilius: *Energy-Awareness and Performance Management with Parallel Dataflow Applications*, *The Journal Signal Processing Systems. Springer US*, 2015

Jose-Luis Gutiérrez-Rivas, Simon Holmbacka, Miguel Míndez-Macías, Wictor Lund, Sébastien Lafond, Johan Lilius, Javier Díaz-Alonso: *Safe Motor Controller in a Mixed-Critical Environment with Runtime Updating Capabilities*, *Journal of Universal Computer Science*, 2015

Simon Holmbacka, Mohammad Fattah, Wictor Lund, Amir-Mohammad Rahmani, Sébastien Lafond, Johan Lilius: *A Task Migration Mechanism for Distributed Many-Core Operating Systems*, *The Journal of Supercomputing. Springer US*, 2014

Publications – Proceedings (22)

Simon Holmbacka, Jörg Keller *Workload Type-Aware Scheduling on big.LITTLE Platforms Proceedings of the 17th International Conference on Algorithms and Architectures on Parallel Processing*, 2017, Helsinki, Finland

Jörg Keller, Patrick Eitchberger, Simon Holmbacka *Hardware and Software support for transposition or bit matrices in high-speed encryption Proceedings of the 17th International Conference on Algorithms and Architectures on Parallel Processing*, 2017, Helsinki, Finland

Simon Holmbacka, Robert Müller: *epEBench: True Energy Benchmark*, *25st Euromicro International Conference on Parallel, Distributed and Network-Based Processing*, 2016, St Petersburg, Russia

Hergys Rexha, Simon Holmbacka, Sébastien Lafond: *Core Level Utilization for Achieving Energy Efficiency in Heterogeneous Systems*, *25st Euromicro International Conference on Parallel, Distributed and Network-Based Processing*, 2016, St Petersburg, Russia

Georgios Georgakarakos, Simon Holmbacka and Johan Lilius *Analysis on Scalability and Energy Efficiency of HEVC Decoding Using Task-Based Programming Model The 2016 Conference on Design & Architectures for Signal & Image Processing, 2016, Rennes, France*

Enida Sheme, Neki Frashëri, Simon Holmbacka, Sébastien Lafond, Dražen Lučanin *Datacenters Powered by Renewable Energy: A Case Study for 60 Degrees Latitude North Seventh symposium on green networking and computing (SGCN 2016)*,2016, Split, Croatia

Simon Holmbacka, Jörg Keller, Patrick Eitschberger, Johan Lilius: *Accurate Energy Modelling for Many-Core Static Schedules Proceedings of the 23rd International Euromicro Conference on Parallel, Distributed and Network-based Processing*, 2015, Turku, Finland

Simon Holmbacka, Johan Lilius: *Fitness: A Metric Describing the Efficiency of Microarchitectual Utilization*, *Eight Nordic Workshop on Multicore Computing*, 2015, Copenhagen, Denmark

Simon Holmbacka, Sébastien Lafond, Johan Lilius: *Performance Monitor Based Power Management for big.LITTLE Platforms HiPEAC Workshop on Energy Efficiency with Heterogeneous Computing*, 2015, Amsterdam, Netherlands

Simon Holmbacka, Erwan Nogues, Maxime Pelcat, Sébastien Lafond, Johan Lilius: *Energy Efficiency and Performance Management of Parallel Dataflow Applications* [**BEST PAPER**] *The 2014 Conference on Design & Architectures for Signal & Image Processing*, 2014, Madrid, Spain

Erwan Nogues, Simon Holmbacka, Maxime Pelcat, Daniel Menard, Johan Lilius: *Power-Aware HEVC Decoding with Tunable Image Quality 2014 IEEE Workshop on Signal Processing Systems*, 2014, Belfast, UK

Simon Holmbacka, Johan Lilius: *Evaluation of CPU Hotplug Latency on Multi-Core ARM Chips*, *Seventh Swedish Workshop on Multicore Computing*, 2014, Lund, Sweden

Fredric Hällis, Simon Holmbacka, Wictor Lund, Robert Slotte, Sébastien Lafond and Johan Lilius: *Thermal Influence on the Energy Efficiency of Workload Consolidation in Many-Core Architecture*, *Proceedings of the 24th Tyrrhenian International Workshop on Digital Communications*, 2013, Genoa, Italy

Simon Holmbacka, Wictor Lund, Sébastien Lafond, Johan Lilius: *Lightweight Framework for Runtime Updating of C-Based Software in Embedded Systems*, *5th Workshop on Hot Topics in Software Upgrades*, 2013, San Jose, US

Simon Holmbacka, Wictor Lund, Sébastien Lafond, Johan Lilius: *QoS Manager for Energy Efficient Many-Core Operating Systems*, *21st Euromicro International Conference on Parallel, Distributed and Network-Based Processing*, 2013, Belfast, UK

Simon Holmbacka, Dag Ågren, Sébastien Lafond, Johan Lilius: *Task Migration for Dynamic Power and Performance Characteristics on Many-Core Distributed Operating Systems*, *21st Euromicro International Conference on Parallel, Distributed and Network-Based Processing*, 2013, Belfast, UK

Simon Holmbacka, Sébastien Lafond, Johan Lilius: *Power Optimized Many-Cores with User Centric Notion of Parallelism*, *Sixth Swedish Workshop on Multicore Computing*, 2013, Halmstad, Sweden

Simon Holmbacka, Sébastien Lafond, Johan Lilius: *Towards Increasing Energy Scalability in Many-Core Systems*, *1st ASPLOS Doctoral Workshop*, 2012, London, UK

Simon Holmbacka, Sébastien Lafond, Johan Lilius: *A PID-Controlled Power Manager for Energy Efficient Web Clusters*, *International Conference on Cloud and Green Computing*, 2011, Sydney, Australia

Simon Holmbacka, Sébastien Lafond, Johan Lilius: *Power Proportional Characteristics of an Energy Manager for Web Clusters*, *11:th International Conference on Embedded Computer Systems: Architctures, Modeling and Simulation*, 2011, Samos, Greece

Simon Holmbacka, Jens Smeds, Sébastien Lafond, Johan Lilius: *System Level Power Management for Many-Core Systems*, *uPM2SoC workshop, DATE '11 Conference*, 2011, Grenoble, France

Simon Holmbacka, Sébastien Lafond, Johan Lilius: *Generic QoS Manager for Many-Core Service-Based Operating Systems*, *Fourth Swedish Workshop on Multicore Computing*, 2011, Linköping Sweden

PUBLICATIONS – NON-PEER-REVIEWED

Simon Holmbacka Fredric Hällis, Wictor Lund, Sébastien Lafond and Johan Lilius: *Energy and Power Management, Measurement and Analysis for Multi-Core Processors TUCS Technical Reports 1117*, 2014, Turku Centre for Computer Science

REGISTERED INVENTIONS

Simon Holmbacka (100%): *Power management with performance monitoring for computer systems*
Coordinator: Olle Lagerroos, June 2015, Åbo Akademi University

Referees

Prof. Johan Lilius
Professor
Åbo Akademi University
Turku Finland
phone: *available on request*
e-mail: *johan.lilius@abo.fi*

Prof. Jörg Keller
Professor
Fernuniversität in Hagen
Hagen Germany
phone: *available on request*
e-mail: *joerg.keller@fernuni-hagen.de*

Jonas Kronlund
Business Design Lead
Elisa Oyj
Helsinki Finland
phone: *available on request*
e-mail: *jonas.kronlund@elisa.fi*

Prof. Juha Plosila
Professor
University of Turku
Turku Finland
phone: *available on request*
e-mail: *juplos@utu.fi*