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## CURRICULUM VITAE

Name: Björn Olof Einar Lisper

Born: April 8, 1956, in Solna, Sweden.

Status: Married, two children, Swedish citizen.

Home address: Oxelvägen 20, S-175 64 Järfälla, Sweden (phone +46-8-36 07 99)

Professional address: School of Innovation, Design, and Engineering, University of Mälardalen, P.O. Box 883, S-721 23 Västerås, Sweden (phone +46-21-15 17 09, e-mail bjorn.lisper@mdh.se)

### Education

1980: M. Sc. (Civilingenjör) in Engineering Physics, Royal Institute of Technology, Stockholm, Sweden

1984: Studies in Computer Science, Stanford University

1987: Ph. D. (TeknD) in Computer Science, Royal Institute of Technology

1991: Docent in Computer Systems, Royal Institute of Technology (roughly equivalent to “habilitation”)

### Employment

1979: Military service

1980: Research engineer, Sunds Defibrator AB

1981-82: Research engineer, SCA Control Systems AB

1983-87: Teaching and Research Assistant, Royal Institute of Technology, Dept. of Numerical Analysis and Computing Science (NADA)

1984: Research Assistant, Stanford University, Dept. of Computer Science

1987-88: Associate Research Scientist, Yale University, Dept. of Computer Science

1988-1992 Assistant Professor (“forskarassistent”), Royal Institute of Technology, Dept. of Telecommunications and Computer Systems

1992-1999 Associate Professor (Senior Lecturer, “universitetslektor”) in Computer Systems (datorsystem), Royal Institute of Technology, Dept. of Teleinformatics (IT)

1988-1995, Researcher, Swedish Institute of Computer Science (40% part time)

Oct. 1994 - Jan. 1995, Invited Professor, Ecole Normale Supérieure de Lyon, Laboratoire de l’Informatique du Parallélisme

July 1999- Professor in Computer Engineering, Mälardalens Högskola (MDH)

### Teaching and Related

Teaching at Royal Institute of Technology (course leader, main lecturer, \* = developed the course):

1989-97 (9 occasions): Parallel Computer Systems (undergraduate level, 4th year, \*)

1991-92 (2 occasions): Program Transformations (graduate level, \*)

1993: Term Rewriting Systems (graduate level, \*)

1996-98 (3 occasions): Semantics of Programming Languages (undergraduate level, 4th year, and graduate level, \*)

1998: Computer Systems (undergraduate level, 4th year, \*)

At Royal Institute of Technology, shared responsibility (\* = developed the course):

1993: Semantics of Programs and Programming Languages (graduate level)

1996,1999: Computer Systems (undergraduate level, 4th year, \*)

Teaching at Mälardalen University (course leader, main lecturer, \* = developed the course):

2000: Advanced Functional Languages (graduate level, \*)

2001: Analysis of Algorithms (undergraduate level, 3rd year)

2001: Advanced Type Systems (graduate level, \*)

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2002-2007 (6 occasions): Functional Programming (undergraduate level, 3rd year, \*)

2005, 2008: Program Analysis (graduate level, \*)

2009-16 (7 occasions): Functional Programming with F# (undergraduate level, 2nd-3rd year, \*)

At Mälardalen University, shared responsibility:

2010-15 (6 occasions): Parallel Systems (undergraduate level, 3rd year)

2015-16 (3 occasions): Software Testing (undergraduate level)

Teaching assistant in various courses in numerical analysis, programming and computer science during last year as undergraduate student (1980) and as graduate student (1982-1987). Various guest lectures, tutorials, and industrial seminars.

Member of DUG (the steering committee for the MSc programme in Computer Engineering at Royal Institute of Technology) 1996-1999.

Director of graduate studies in Computer Science and Engineering, Mälardalen University, 1999-2004

### Academic Tasks

Program committees:

- Euro-Par'95 international conference on parallel processing, Stockholm, Aug. 1995
- Seventh Swedish Workshop on Computer Systems Architecture (DSA'98), Göteborg, June 1998
- Second International Workshop on Engineering of Reconfigurable Hardware/Software Objects (EN-REGLE), Las Vegas, June 2000
- International Conference on Engineering of Reconfigurable Systems and Algorithms (ERSA), 2001–2007
- Real-Time in Sweden 2001, 2003, and 2007
- International Workshop on Worst-Case Execution Time Analysis, 2006, 2008, 2009, 2010, 2012, 2013, 2014, 2015, 2016
- ISoLA Workshop on Leveraging Applications of Formal Methods, Verification and Validation, 2007
- Swedish Workshop on Multi-Core Computing, 2008, 2009, 2010, 2011, 2012, 2013, 2014, 2015
- Workshop on High-Level Programming for Heterogeneous and Hierarchical Parallel Systems (HLPGPU 2014), 2014
- Static Analysis Symposium (SAS), 2015
- Fourth International workshop on Foundational and Practical Aspects of Resource Analysis (FOPARA 2015), 2015
- Workshop on Resource-Aware Computing (RAC), 2016

Other conference duties:

- On the local organization committee of the CONCUR'94 international conference on concurrency, Uppsala, Aug. 1994
- On the local organization committee of the Euro-Par'95 international conference on parallel processing, Stockholm, Aug. 1995
- Chairman for Erlang User Conference 2001
- Local Arrangements Co-Chair for 8th ACM SIGPLAN International Conference on Functional Programming (ICFP 2003)

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- Co-organizer of the Special Track on Introduction of Multi-Core Systems in Automotive Applications, 3rd International Symposium on Leveraging Applications of Formal Methods, Verification and Validation (ISoLA 2008)
- Chair for 10'th International Workshop on Worst-Case Execution Time Analysis, 2010
- Co-organizer of the Special Track on Resource and Timing Analysis, 4th International Symposium on Leveraging Applications of Formal Methods, Verification and Validation (ISoLA 2010)
- Co-organizer of the Special Track "Timing Constraints: Theory Meets Practice", 5th International Symposium on Leveraging Applications of Formal Methods, Verification and Validation (ISoLA 2012)
- Member of the steering group for International Workshop on Worst-Case Execution Time Analysis, from 2014

Field editor (data parallelism) for *Discrete Mathematics and Computer Science* (electronically published by Int. Thomson Publ.)

Reviweing for ACM Transactions on Embedded Computing Systems, BIT, IEEE Transactions on Computers, IEEE Transactions on Industrial Informatics, IEEE Transactions on Parallel and Distributed Systems, IEEE Transactions on Very Large Scale Integration Systems, Information Processing Letters, Informs Journal on Computing, International Journal of Parallel Programming, Formal Aspects of Computing, Parallel Processing Letters, Distributed Computing, Computational Intelligence, IEEE Computer, Journal of VLSI Signal Processing, Journal of Functional Programming, Journal of Supercomputing, Journal of Systems Architecture, Journal of Systems and Software, Parallel Algorithms and Applications, Real-Time Systems, Science of Computer Programming, Software: Practice and Experience, Theoretical Computer Science, Addison-Wesley (textbook manuscript), Research Council of Norway (application for funding), Science Foundation Ireland (ditto), National University of Singapore (ditto), Austrian Science Fund (ditto), Agence Nationale de la Recherche (France, ditto), and various conferences.

Opponent at Ph. D. defenses:

- Jonas Vasell, Dept. of Computer Engineering, Chalmers University of Technology, Sept. 1992.
- Tobias Ritzau, IDA, Linköping University, June 2003.

"Sakkunnig" (external expert evaluator) for:

- Two senior lecturerships in Computer Science at Mid Sweden University, Sundsvall, 1995
- Senior lecturership in Computer Systems at Uppsala University, 1996
- Senior lecturership in Computer Science at Chalmers Institute of Technology, 1996
- Senior lecturership in Computer Systems at Uppsala University, 1997
- Three senior lecturerships in Computer Systems at Mid Sweden University, Sundsvall, 1998
- Senior lecturership in Computer Communication Networks at Mid Sweden University, Sundsvall, 1998
- Habilitation a Diriger des Recherches (roughly docentur) of Jean-Louis Giavitto, Université Paris-Sud, 1999
- Senior lecturership (Førsteamanuensis) in Informatics (programming theory) at University of Bergen, 1999
- Professorship (befordringsprofessur) in Computer Systems for Lars Asplund, Uppsala University, 1999

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- Two senior lecturerships in Computer Science at Uppsala University, 2000
- Senior lecturerships in Computer Science and Computer Engineering at Halmstad University, 2000
- Senior lecturership in Computer Engineering at Mid Sweden University, Sundsvall, 2000
- Research Assistant (forskarassistent) in Computer Systems at Uppsala University, 2001
- Senior lecturership in Computer Communication at Mid Sweden University, Sundsvall, 2002
- Research Assistant (forskarassistent) in Computer Science at Linköping University, 2002
- Senior lecturership in Computer Science at Lund University, 2003
- Senior lecturership in Computer Engineering at Chalmers Institute of Technology, 2008
- Senior lecturership in Computer Engineering at University West, 2009
- Senior lecturership (befordran) for Johan Montelius in Communication Systems, Royal Institute of Technology, 2010
- Habilitation (docentur) of Raimund Kirner, Vienna University of Technology, 2010
- Senior lecturership in Computer Science at Linköping University, 2010
- Professor chair in Computer Systems Engineering at Halmstad University, 2012
- Research Fellow in Science and Engineering at Linköping University, 2013
- Assistant senior lecturership in Computer Systems Engineering at Halmstad University, 2014
- Docentur of Jonas Lundberg, Linnéaus University, 2015
- Senior lecturership (befordran) for Ahmed Rezine in Computer Science, Linköping University, 2015
- Senior lecturership in Software Construction, Royal Institute of Technology, 2015

Member of Ph. D. evaluation committees (betygskommittéer):

- Jean-François Collard, Computer Science, Ecole Normale Supérieure de Lyon, Jan. 1995
- Håkan Grahn, Dept. of Computer Engineering, Lund University, Dec. 1995
- Mikael Petterson, Dept. of Computer and Information Science, Linköping University, Dec. 1995
- Toomas Plaks, Dept. of Computer Engineering, Chalmers Institute of Technology, Feb. 1997
- Johan Ringström, Dept. of Computer and Information Science, Linköping University, Dec. 1997
- Christer Berg, Dept. of Numerical Analysis and Computer Science, Royal Institute of Technology, Dec. 1997
- Magnus Carlsson, Dept. of Computing Science, Chalmers Institute of Technology, March 1998
- Henrik Nilsson, Dept. of Computer and Information Science, Linköping University, May 1998
- Pierangelo Dell'Acqua, Dept. of Computer Science, Uppsala University, Sep. 1998
- Mats Näslund, Dept. of Numerical Analysis and Computer Science, Royal Institute of Technology, Oct. 1998
- Mattias O'Nils, Dept. of Electronics, Royal Institute of Technology, June 1999
- Ashley Saulsbury, Dept. of Teleinformatics, Royal Institute of Technology, Dec. 1999

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- Peeter Ellervee, Dept. of Electronics, Royal Institute of Technology, March 2000
- Lars Engebretsen, Dept. of Numerical Analysis and Computer Science, Royal Institute of Technology, April 2000
- Mikael Sjödin, Dept. of Information Technology, Uppsala University, May 2000
- Jörgen Gustafsson, Dept. of Computing Science, Chalmers Institute of Technology, June 2001
- Lars-Åke Fredlund, Dept. of Teleinformatics, Royal Institute of Technology, Sep. 2001
- Tim Heyer, Dept. of Computer and Information Science, Linköping University, Dec. 2001
- Eriks Sneiders, DSV, Royal Institute of Technology/SU, Feb. 2002
- Magnus Broberg, Department of Software Engineering and Computer Science, Blekinge Institute of Technology, May 2002
- Thomas Lundquist, Dept. of Computer Engineering, Chalmers Institute of Technology, June 2002
- Håkan Forsberg, Dept. of Computer Engineering, Chalmers Institute of Technology, Sep. 2003
- Julien d'Orso, Dept. of Information Technology, Uppsala University, Nov. 2003
- Sven Eklund, Dept. of Computer Engineering, Chalmers Institute of Technology, June 2004
- Erik Lindskog, IMIT, Royal Institute of Technology, June 2005
- Vilhelm Dahllöf, Dept. of Computer and Information Science, Linköping University, June 2006
- Phuong Hoai Ha, Dept. of Computer Engineering, Chalmers Institute of Technology, June 2006
- Peter Aronsson, Dept. of Computer and Information Science, Linköping University, June 2006
- Daniel Karlsson, Dept. of Computer and Information Science, Linköping University, June 2006
- Minh Do, Dept. of Computer Engineering, Chalmers Institute of Technology, Chalmers, June 2007
- Thomas Gustafsson, Dept. of Computer and Information Science, Linköping University, Sept. 2007
- Johan Glimming, Dept. of Numerical Analysis and Computer Science, Royal Institute of Technology, Jan. 2008
- Rene Krenz-Bååth, IMIT, Royal Institute of Technology, Jan. 2008
- Hans Svensson, Dept. of Computer Engineering, Chalmers Institute of Technology, April 2008
- Jakob Nordström, Dept. of Numerical Analysis and Computer Science, Royal Institute of Technology, May 2008
- Farshad Moradi, IMIT, Royal Institute of Technology, May 2008
- Lisa Kaati, Dept. of Information Technology, Uppsala University, Nov. 2008
- Jan Nyström, Dept. of Information Technology, Uppsala University, June 2009
- Mats Petter Wallander, Dept. of Computer Science, Lund University, June 2009
- Dennis Strein, Dept. of Mathematics and System Engineering, Växjö University, Dec. 2009
- Fredrik Kuivinen, Dept. of Computer and Information Science, Linköping University, Dec. 2009
- Adrian Prantl, Vienna University of Technology, June 2010 (external examiner)

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- Lei Ju, National University of Singapore, Sept. 2010 (external examiner)
- Marcus Edvinsson, Dept. of Mathematics and System Engineering, Växjö University, Oct. 2010
- Martin Kero, Department of Computer Science and Electrical Engineering, Luleå University of Technology, Oct. 2010
- Daniel Cederman, Dept. of Computer Engineering, Chalmers Institute of Technology, March 2011
- Farzad Kamrani, IMIT, Royal Institute of Technology, Dec. 2011
- Enrico Mezzetti, Univ. Bologna, Jan. 2012 (external reviewer)
- Feng Zhang, IMIT, Royal Institute of Technology, June 2012
- Muddassar Singhu, CSC, Royal Institute of Technology, April 2013
- Tobias Gutzmann, Linnéaus University, May 2013
- Nan Guan, Dept. of Information Technology, Uppsala University, Dec. 2013
- Jonas Lundberg, Linnéaus University, June 2014
- Andre Maroneze, Université de Rennes 1, June 2014
- Kasper Soe Luckow, Univ. Aalborg, Nov. 2014
- Hosein Attarzadeh, ICT, Royal Institute of Technology, Dec. 2014
- Jan Kleinsorge, Dortmund University of Technology, Oct. 2015 (external reviewer)
- Frederic Haziza, Dept. of Information Technology, Uppsala University, Nov. 2015
- Pan Xiaoyue, Dept. of Information Technology, Uppsala University, March 2016

#### **Leadership, boards, etc.**

Head of PARADISlab, Dept. of Teleinformatics, Royal Institute of Technology, 1995–99

Deputy Head of Department (proprefekt), Dept. of Teleinformatics, Royal Institute of Technology, 1997–99

Member of the EIT Assessment Committee (Tjänsteförslagsnämnden EIT), Royal Institute of Technology, 1996–1999.

Head of Computer Science Lab, IDT, Mälardalen University, 1999, and 2003–2009.

Member of the steering group of Mälardalen Real-Time Research Centre, from 1999.

Member of the board of the VINNOVA Competence Center ASTEC (Advanced Software Technology) in Uppsala, 1999–2005.

Member of the board of the KK-foundation, 2000–2003.

Member of the steering board of the National Graduate School in Computer Science (CUGS), 2001–2008.

Member of the board of the VINNOVA Excellence Center CNS (Centre for Networked Systems) at SICS, 2006–2012.

Responsible for the Timing Analysis activity within the ARTIST2 and ArtistDesign EU Networks of Excellence, 2007–2011

Coordinator of the FP7 STREP ALL-TIMES (Integrating European Timing Analysis Technology), 2007–2010

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Coordinator of the FP7 IAPP project APARTS (Advanced Program Analysis for Real-Time Systems), 2010–2014

Chair for the COST Action IC1202 TACLe (Timing Analysis on Code Level), from 2012

Coordinator of the national KKS SIDUS project TOCSYC (Testing of Critical System Characteristics), from 2016

### External Research Grants

1991-93: TFR 91-333 *High Level Synthesis and Programming of Parallel Systems*, 1608 kkr.

1994-97: TFR 94-109 *Theory for Data Parallelism and Functional Languages*, 1444 kkr.

1996-97 EC TMR (Training and Mobility) programme, contract no. ERBFMBICT950113 *Design and Implementation of Data-parallel Functional Languages* (grant to host Dr. Jean-François Collard for one year), 23.360 ECU.

1997-99 *Parallelization of Data Fields*, travel grant from Svenska institutet to cooperate with Prof. Christian Lengauer at Universität Passau, 57 kkr.

1998-00: TFR 97-722 *Advanced Code Generation for Parallel Computers*, 930 kkr.

1999-01: TFR 98-653 *Semantics and Proofs for Programming Languages*, “ramanslag” with J. Parrow (main applicant) and M. Dam, 3660 kkr.

2000-02: TFR 221-99-353 *High-Level Languages for Hard Real-Time Systems*, 1110 kkr.

2000: ASTEC (VINNOVA-supported competence center) *Worst-Case Execution Time Analysis* (with Hans Hansson), 200 kkr

2001: Volvo Research Foundation *Domain-dependent Aspects of Learning Quality in Evolutionary Algorithms* (with Jacek Malec), 350 kkr

2001-03: ASTEC *Worst-Case Execution Time Analysis* (with Jan Gustafsson), 3618 kkr.

2002-04: VR *Worst-Case Execution Time Analysis* (with Jan Gustafsson), 1755 kkr.

2002: KK-foundation *Dimensional Analysis for Modeling Languages*, 473 kkr.

2003: Enea Embedded Systems AB, software donation (source code for OSE real-time operating system), estimated value 550 kkr.

2004: Software donations from AbsInt Angewandte Informatik GmbH (estimated value 1310 kkr), Tidorum Oy (estimated value 90 kkr), and IAR Systems AB (estimated value 316 kkr).

2004-08: Ericsson AB, and ASTEC *Parallel Execution of PLEX Programs*, Ericsson 3540 kkr, ASTEC 499 kkr.

2004-07: EU FP6 Network of Excellence *ARTIST2*, Core Partner in the Compilers and Timing Analysis cluster, 480 kkr.

2006-10 SSF PROGRESS Centre for Predictable Embedded Software Systems (co-applicant, main applicant H. Hansson), total of 49 Mkr.

2006-08: KK-foundation *Execution Time Analysis of Time-Critical Embedded Software*, 1936 kkr.

2008-09: EU FP7 STREP 215068 *Integrating European Timing Analysis Technology* (ALL-TIMES), coordinator, 1.6 MEuro total, 414 kEuro to own group

2008-2011: EU FP7 Network of Excellence *ArtistDesign*, Core Partner in the SW Synthesis, Code Generation and Timing Analysis cluster, 89 kEuro.

2009-2011: VR *Worst-Case Execution Time Analysis of Parallel Systems* (with Andreas Ermedahl, Jan Gustafsson), 2040 kkr.

2010-12: ITEA2 (Swedish funder: VINNOVA) *TIMMO-2-USE*, 1144 kkr.

2011-2014: VR “ramanslag” *Contesse* (co-applicant, main applicant I. Crnkovic), total of 8.4 Mkr.

2011-14: EU FP7 IAPP *Advanced Program Analysis for Real-Time Systems* (APARTS), coordinator, 193 kEuro total, 132 kEuro to own group.

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2011-16: SSF project Synopsis (co-applicant, main applicant H. Hansson), total of 19 Mkr.

2012-17: SSF project RALF3 (co-applicant, main applicant I. Crnkovic), total of 29 Mkr.

2012-14: VINNOVA FFI project *AUTOSAR for Multiple Kernels in Vehicle and Automation Industry* (co-applicant, with T. Nolte), total of 1.6 Mkr.

2013-2018: KKS SIDUS project TOCSYC (co-applicant, main applicant P. Pettersson), total of 27 Mkr

2015-2018: KK-foundation *Static Program Analysis for Complex Embedded Systems*, 4.3 Mkr.

2015-2018: ITEA3 (Swedish funder: VINNOVA) *ASSUME*, 1299 kkr.

### External Educational Grants

2000: *Authorized Academic Java Campus*, collaboration with Sun Microsystems regarding Java education. The contract included a donation with a four-processor E450 Sun Enterprise Server, four SunRay 1 thin clients, two Ultra-10 Workstations, and heavily discounted software and teaching material. Estimated value in range 400-500 kkr.

2003: KK-foundation *Nätverk för kunskapsutveckling inom Informatikens vetenskapsteori* (with Gordana Dodig-Crnkovic), 50 kkr

2004: KK-foundation *Nationell kurs i informationsvetenskapernas filosofi* (with Gordana Dodig-Crnkovic), 182 kkr

### Supervision

I have supervised the following graduate students to Licentiate or Ph. D. exam, as main supervisor:

- Karl-Filip Faxén, Royal Institute of Technology (Ph. D. June 1997, thesis title *Analysing, Transforming and Compiling Lazy Functional Programs*, Licentiate Jan. 1996, thesis title *Flow Inference, Code Generation, and Garbage Collection for Lazy Functional Languages*).
- Xavier Vera, Mälardalen University (Ph. D. Jan. 2004, thesis title *Cache and Compiler Interaction*, Licentiate March 2002, thesis title *Towards a Static Cache Analysis for Whole Program Analysis*).
- Peter Drakenberg, Royal Institute of Technology (Ph. D. Sep. 2004, thesis title *Computational Structures and Language Design*, Licentiate Feb. 2001, thesis title *Hierarchical Array Tiling*).
- Baran Cürüklü, Mälardalen University (Ph. D. Apr. 2005, thesis title *A Canonical Model of the Primary Visual Cortex*, Licentiate Dec. 2003, thesis title *Layout and Function of the Intracortical Connections within the Primary Visual Cortex*).
- Gordana Dodig-Črnkovic, Mälardalen University (Ph. D. Sep. 2006, thesis title *Investigations into Information Semantics and Ethics of Computing*).
- Jan Carlson, Mälardalen University (Ph. D. June 2007, thesis title *An Intuitive and Resource-Efficient Event Detection Algebra*, Licentiate June 2004, thesis title *An Intuitive and Resource-Efficient Event Detection Algebra*).
- Thomas Larsson, Mälardalen University (Ph. D. Jan. 2009, thesis title *Adaptive Bounding Volume Hierarchies for Efficient Collision Queries*, Licentiate Sep. 2003, thesis title *Adaptive Algorithms for Collision Detection and Ray Tracing of Deformable Meshes*).
- Markus Bohlin, Mälardalen University (Ph. D. Dec. 2009, thesis title *A Study of Combinatorial Optimization Problems in Industrial Computer Systems*, Licentiate April 2004, thesis title *Design and Implementation of a Graph-Based Constraint Model for Local Search*).
- Stefan Bygde, Mälardalen University (Ph. D. June 2013, thesis title *Parametric WCET Analysis*, Licentiate Mar. 2010, thesis title *Static WCET Analysis Based on Abstract Interpretation and Counting of Elements*).



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- Andreas Gustavsson, Mälardalen University (Ph. D. May 2016, thesis title *Static Execution Time Analysis of Parallel Systems*, Licentiate Dec. 2014, thesis title *Static Timing Analysis of Parallel Systems Using Abstract Execution*).
- Claes Thornberg, Royal Institute of Technology (Licentiate April 2000, thesis title *Towards Polymorphic Type Inference with Elemental Function Overloading*).
- Waldemar Kocjan, Mälardalen University (Licentiate Dec. 2005, thesis title *Symmetric Cardinality Constraints*).
- Johan Lindhult, Mälardalen University (Licentiate May 2008, thesis title *Operational Semantics for PLEX: A Basis for Safe Parallelization*).
- Marcus Jägemar, Mälardalen University (Licentiate June 2016, thesis title *Utilizing Hardware Monitoring to Improve the Performance of Industrial Systems*).

I have supervised the following graduate students to Licentiate or Ph. D. exam, as assistant supervisor: Csaba Andras Moritz (Computer Systems, Royal Institute of Technology, main advisor Prof. Lars-Erik Thorelli, Ph. D. Sep. 1998, thesis title *Cost Modeling and Analysis: Towards Optimal Resource Utilization in Parallel Computer Systems*), Per Hammarlund (Computer Science, Royal Institute of Technology, main advisor Prof. J.-O. Eklundh), Ph. D. June 1996, thesis title *Techniques for Efficient Parallel Scientific Computing*, Olof Johansson (Computer Science Umeå University, main advisor Prof. P. Eklund, Lic. April 1995, thesis title *A Functional Language for Microcomputers*), Christina Björkman (Computer Science Education, University College Karlskrona-Ronneby, main advisor Prof. Lena Trojer, Ph. D. May 2005, thesis title *Crossing Boundaries, Focusing Foundations, Trying Translations: Feminist Technoscience Strategies in Computer Science*), Filip Sebek (Computer Science, Mälardalen University, main advisor Prof. Lennart Lindh, Lic. Oct. 2002, thesis title *Instruction Cache Memory Issues in Real-Time Systems*), Frank Lüders (Computer Science, Mälardalen University, main advisor Prof. Ivica Crnkovic, Ph. D. Dec. 2006, thesis title *An Evolutionary Approach to Software Components Embedded Real-Time Systems*), Mikael Sollenborn (Computer Science, Mälardalen University, main advisor Assoc. Prof. Peter Funk, Lic. Oct. 2004, thesis title *A Clustering and Case-Based Reasoning for User Stereotypes*), Markus Nilsson (Computer Science, Mälardalen University, main advisor Assoc. Prof. Peter Funk, Ph. D. Aug. 2005, thesis title *Retrieve and Classify*), Johan Kraft (Computer Science, Mälardalen University, main advisor Prof. Christer Norström, Lic. June 2005, thesis title *Modeling the Temporal Behavior of Complex Embedded Systems – A Reverse Engineering Approach*, Ph. D. Aug. 2010, thesis title *Enabling Timing Analysis of Complex Embedded Software Systems*), Rikard Lindell, (Computer Science, Mälardalen University, main advisor Assoc. Prof. Jan Gustafsson, Ph. D. June 2009, thesis title *“Jag älskar att allt ligger överst”: en designstudie av yttre interaktion för kollaborativa multimedia-framträdanden*).

I have supervised, or examined, a large number of M. Sc. theses on various topics in Computer Engineering and Computer Science.

### Awards

Best paper award at WCET'07 (7<sup>th</sup> International Workshop on Worst-Case Execution Time Analysis)

Best paper award at RTCSA'09 (16<sup>th</sup> International Conference on Real-Time Computing Systems and Applications)

Best paper award at CRTS'11 (4<sup>th</sup> Workshop on Compositional Theory and Technology for Real-Time Embedded Systems)

### Journal Publications

- 1 Synthesis and equivalence of concurrent systems. *Theoret. Comput. Sci.*, 58:183–199, 1988. Short version in Proc. 13th International Colloquium on Automata, Languages and Programming, pages 226–235, Rennes, France, July 1986.

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- 2 The Interactive Space-Time Scheduler. *Microprocessing and Microprogramming*, 30(1–5):109–116, Aug. 1990.
- 3 Synthesis of time-optimal systolic arrays with cells with inner structure. *J. Parallel Distrib. Comput.*, 10(2):182–187, Oct. 1990.
- 4 Computing transitive closure on systolic arrays of fixed size. *Distrib. Comput.*, 5(3):133–144, Dec. 1991.
- 5 Total unfolding: Theory and applications. *J. Functional Programming*, 4(4):479–498, Oct. 1994.
- 6 Preconditioning index set transformations for time-optimal affine scheduling. *Algorithmica*, 15:193–203, 1996. Preliminary version in *Proc. 2nd Ann. Symp. on Parallel Algorithms and Architectures*, pages 360–366, Crete, July 1990.
- 7 Computing in unpredictable environments: Semantics, reduction strategies, and program transformations. *Theoret. Comput. Sci.*, 190(1):61–85, Jan. 1998. Short version in *Proc. Colloquium on Trees in Algebra and Programming*, pp. 165–179, April 1996.
- 8 Infinite unfolding and transformations of nondeterministic programs. *Fundamenta Informaticae*, 66(4):415–439, Apr. 2005.
- 9 Code analysis for temporal predictability. *Real-Time Systems*, 32(3):253–277, Mar. 2006. (With J. Gustafsson, P. Puschner, and R. Kirner.)
- 10 Data cache locking for tight timing calculations. *ACM Trans. on Embedded Computing Sys.*, 7(1):1–38, Dec. 2007. (With X. Vera, and J. Xue.)
- 11 A resource-efficient event algebra. *Science of Computer Programming*, 75(12):1215–1234, Dec. 2010. (With J. Carlson.)
- 12 An efficient algorithm for parametric WCET calculation. *Journal of Systems Architecture*, 57:614–624, 2011. (With S. Bygde, and A. Ermedahl.)
- 13 The ALL-TIMES project: introduction and overview. *International Journal on Software Tools for Technology Transfer (STTT)*, 15(1):1–8, 2013.
- 14 Practical experiences of applying source-level WCET flow analysis to industrial code. *International Journal on Software Tools for Technology Transfer (STTT)*, 15(1):53–63, 2013. (With A. Ermedahl, D. Schreiner, P. Gliwa, and J. Knoop.)
- 15 Estimation of productivity increase for timing analysis tool chains. *International Journal on Software Tools for Technology Transfer (STTT)*, 15(1):65–84, 2013. (With N. Merriam.)

#### **Books, Book Contributions, Edited Works**

- 16 *Synthesis of Synchronous Systems by Static Scheduling in Space-Time*, volume 362 of *Lecture Notes in Comput. Sci.* Springer-Verlag, Heidelberg, May 1989. (Ph. D. thesis).
- 17 Affine permutations of matrices on mesh-connected arrays. In M. A. Bayoumi, editor, *Parallel Algorithms and Architectures for DSP Applications*, pages 129–158. Kluwer Academic Publishers, 1991. (With S. V. Rajopadhye.)
- 18 Data parallelism and functional programming. In G.-R. Perrin and A. Darte, editors, *The Data Parallel Programming Model: Foundations, HPF Realization, and Scientific Applications*, Vol. 1132 of *Lecture Notes in Comput. Sci.*, pages 220–251, Les Ménuires, France, Mar. 1996. Springer-Verlag.
- 19 Trends in timing analysis. In *From Model-Driven Design to Resource Management for Distributed Embedded Systems*, volume 225/2006, pages 85–94, Braga, Portugal, Oct. 2006. IFIP International Federation for Information Processing, Springer Boston.

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- 20 B. Lisper, editor. *Proc. 10<sup>th</sup> International Workshop on Worst-Case Execution Time Analysis (WCET'2010)*, Brussels, Belgium, July 2010. OCG.
- 21 B. Lisper, guest editor. *International Journal on Software Tools for Technology Transfer (STTT)*, volume 15 no. 1. Springer, 2013. Special Section on the ALL-TIMES project.

### Reviewed Conference and Workshop Publications

- 22 Single assignment semantics for imperative programs. In E. Odjik, M. Rem, and J.-C. Syre, editors, *Proc. PARLE'89 vol. II: Parallel Languages*, pages 321–334, Berlin, June 1989. Volume 366 of *Lecture Notes in Comput. Sci.*, Springer-Verlag.
- 23 Matrix permutations on mesh-connected arrays. In *International Symposium on Circuits and Systems*, pages 2626–2629, New Orleans, LA, May 1990. IEEE CaS Society. (With S. V. Rajopadhye.)
- 24 Detecting static algorithms by partial evaluation. In *Proc. ACM SIGPLAN Symposium on Partial Evaluation and Semantics Based Program Manipulation*, pages 31–42, June 1991.
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Note: Conference/workshop papers and research reports are listed only if not subsumed by later publications.