

# David Broman

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## Short personal summary

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David Broman is an Associate Professor at the KTH Royal Institute of Technology in Sweden, where he is leading the Model-based Computing Systems (MCS) research group. Between 2012 and 2014, he was a visiting scholar at the University of California, Berkeley. His research focuses on model-based design of time-aware systems, including cyber-physical systems, embedded systems, and real-time systems. In particular, he is interested in modeling language theory, formal semantics, compilers, and machine learning.

## Academic Positions

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- 2014- Associate Professor**  
*KTH Royal Institute of Technology, Sweden*  
 Full time employed since July 1, 2014.  
 Leader of the research group Model-based Computing Systems (MCS) since the fall 2016.
- 2014-2016 Assistant Research Engineer**  
*University of California, Berkeley, USA*  
 Full time employed January-June 2014. 10% between July 1, 2014 and June 30, 2016.
- 2011-2013 Visiting Scholar**  
*University of California, Berkeley, USA*  
 Funded by a two-year postdoctoral fellowship grant (starting December 30, 2011) awarded by the Swedish research council (VR).
- 2011-2014 Assistant Professor**  
*Linköping University, Sweden*  
 Full time. On leave between December 2011 to June 2014, visiting UC Berkeley.
- 2005-2010 Doctoral Student**  
*Linköping University, Sweden*  
 Department of Computer and Information Science. Start May 2005. Defense October 1, 2010.

## Academic Degrees and Titles

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- 2015 Docent in Computer Science**  
*KTH Royal Institute of Technology, Sweden*
- 2010 Ph.D. in Computer Science (October 1, 2010)**  
*Department of Computer and Information Science, Linköping University, Sweden*  
 Main supervisor: Peter Fritzson  
 Co-supervisors: Jeremy Siek, Björn Lisper, and Thomas Schön  
 Thesis: *Meta-Languages and Semantics for Equation-Based Modeling and Simulation.*

- 2007 Licentiate of Engineering in Computer Science** (December 7, 2007)  
*Department of Computer and Information Science, Linköping University, Sweden*  
 Thesis: *Safety, Security, and Semantic Aspects of Equation-Based Object-Oriented Languages and Environments.*
- 2001 Master of Science in Industrial Engineering and Management** (June 8, 2001)  
*Linköping University, Linköping, Sweden.*  
 Specialized in computer science and economical information systems.  
 Theses: *Lossless data compression – methods for achieving better performance in a Wireless VPN.*

## Professional Positions in Industry

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- 2018- Consecio AB (Co-founder, co-owner)**  
 Development of a mobile app for secure and private data handling and contact management.
- 2016- Broman Systems and Consulting (Co-founder, Co-owner)**  
 Part time software product development.
- 2005-2012 Broman Software Consulting, Stockholm and Linköping, Sweden (Owner)**  
 Part time consulting services in the area of information security and software development.  
 Three main customers within the consulting, media, and security sectors.
- 2000-2005 Columbitech, Stockholm, Sweden (Employee)**  
 Employed 2000-08-24 to 2005-04-17. Full time during 2001-2005.  
 System designer/architect, software developer, and technical project manager.  
[www.columbitech.com](http://www.columbitech.com)
- System design, project management, and software system development together with partners and customers in USA and Japan.
  - Team leader of the development of Columbitech WAP Suite.
  - Project manager of the security certification according to the US National Institute of Standards and Technology FIPS 140-2.
  - Project manager of Columbitech's license management system.
  - Configuration Manager (CM), part time one year.
  - Design and development of parts of the core-functionality of Columbitech's WVPN-client and server: Security layer Wireless TLS for the embedded client, ASM optimizations, Data compression, Dynamic DNS, FIPS 140-2 Cryptographic module, RADIUS etc.
- 1999-2000 Consima, Linköping (Co-founder and owner)**  
 Development of an Intranet system and distance education system. 1 year part-time.  
 Main customer: Swedish Army. Development in C++, Java, and ASP.
- 1996-1999 Velvet Development, Linköping, Sweden (Co-founder and owner)**  
 Development and sales of a music software for PC. Part time.

## Temporary Appointments

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- 2008 University of Colorado at Boulder, Colorado, USA**  
 Guest Scholar, 3 months.
- 2000-2001 Eidgenössische Technische Hochschule (ETH), Zürich, Switzerland**  
 Exchange student, one semester.
- 1998-1999 Armed Forces Intelligence and Security Center, Uppsala, Sweden**  
 Military Service, Intelligence Assistant School, Staff Sergeant, 12 months.

- 2010**      **Parental leave**, Linköping, Sweden, 5 months, 75%  
**2008**      **Parental leave**, Stockholm, Sweden, 5 months, 75%

## Innovative and Entrepreneurial Achievements

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- 2018**      Co-founded the company Consecio AB.  
**2017-2018** Part of the KTH innovation program, which resulted in the founding of Consecio AB.  
**2016**      Co-founded the company Broman Systems and Consulting AB.  
**2009**      Invented a new way of teaching software engineering projects (called the *company approach*). Results are published in IEEE transactions on education and the course achieves excellent course evaluations every year.  
**2007**      Co-founded the International Workshop EOOLT series (Equation-Based Object-Oriented Languages and Tools). The workshop has been organized 7 times since its start.  
**1996, 1999** Co-founder of two smaller start-up companies.

## Assignments and Commissions of Trust

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- 2018**      Member of the investigation and proposal for the new retirement policy for KTH.  
**2018**      Member of the KTH EECS school investigation on EECS educational portfolio 2025.  
**2018**      Member of the SRA TNG Executive Committee, KTH.  
**2017**      External subject specialist at the Linnaeus University (Senior Lecturer in Computer Science)  
**2015-**      Elected member of the KTH Faculty Assembly  
**2015-**      Member of the Advisory Board for the High School *Stockholm Science and Innovation School (SSIS)*, Kista, Sweden  
**2006-2008** Member of the board of the Department of Computer and Information Science (Ph.D. student representative), Linköping University, Sweden.

## Professional Affiliations

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- 2014-**      Steering committee member of TAACCS (Time-Aware Applications, Computers, and Communication systems).  
**2013-**      Member of the International Federation for Information Processing (IFIP) working group 2.4, Software Implementation Technology  
**2011-**      Member of Institute of Electrical and Electronics Engineers (IEEE).  
Senior member since 2016.  
**2011-**      Member of Association for Computing Machinery (ACM).  
**2007-**      Member of the Open Source Modelica Consortium (OSMC).  
**2005-2012** Member of International Information Systems Security Certification Consortium (ISC2).  
**2005-**      Member of Modelica Association and the Modelica design group.

## Honors and Awards

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- 2018**      Outstanding Paper Award at the IEEE Real-Time and Embedded Technology and Applications Symposium (RTAS 2018).  
**2018**      A best paper award in the journal Software & Systems Modeling (SoSyM award 2018).  
**2017**      The award as teacher of the year at KTH, selected by the student union.  
**2017**      Best paper award at the 2nd IEEE International Conference on Internet-of-Thing Design and Implementation (IoTDI 2017)  
**2016**      Awarded the individual grant for future research leaders (FFL6) by the Swedish Foundation for Strategic Research (8% acceptance rate).  
**2012**      Official letter from the dean of engineering, Linköping University, for excellent course evaluations on the Master's course Software Engineering.

- 2010** Award for best paper presentation at the 23rd annual IEEE-CS Conference on Software Engineering Education and Training (CSEE&T), CMU, Pittsburgh, USA.
- 2010** IPLOM, award for excellent course “Software Engineering”.
- 2008** Selected to Vinnova financed “From research to business” <http://www.esbri.se/r2b.asp>
- 2008** Supervisor for the Master’s thesis awarded best thesis at the Department of Computer and Information Science, Linköping University, Sweden.

### Ongoing Supervision of Ph.D. Students

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- 2019-** Linnea Ingmar, KTH Royal Institute of Technology (main supervisor)
- 2019-** Gizem Çaylak, KTH Royal Institute of Technology (main supervisor)
- 2018-** Viktor Palmkvist, KTH Royal Institute of Technology (main supervisor)
- 2017-** Daniel Lundén, KTH Royal Institute of Technology (main supervisor)
- 2015-** Saranya Natarajan, KTH Royal Institute of Technology (main supervisor)

### Ongoing Mentoring of Postdocs

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- 2019-** Mauricio Chimento, KTH Royal Institute of Technology. (starting in the fall 2019)
- 2019-** Joey Öhman, Research engineer/Amanuens, KTH Royal Institute of Technology.
- 2018-** Elias Castegren, KTH Royal Institute of Technology.
- 2018-** Oscar Eriksson, Research Engineer, KTH Royal Institute of Technology.

### Finished Supervision and Mentoring of Ph.D. Students

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- 2018** Leif Jonsson, Linköping University (co-supervisor, main supervisor Prof. Kristian Sandahl)
- 2017** Hokeun Kim, UC Berkeley (mentoring, main supervisor Prof. Edward A. Lee)
- 2017** Yooseong Kim, Arizona State University (2012-2017: mentoring and member of the supervisory committee. Main supervisor: Prof. Aviral Shrivastava)
- 2015** Mikael Zimmer, UC Berkeley (2012-2015: mentoring. Main supervisor: Prof. Edward A. Lee)

### Previous Mentoring of Postdocs

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- 2016-2017** Konstantinos Koukos, KTH Royal Institute of Technology (1 year).

### Teaching Experience

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- 2019** Examiner and course responsible for the course IS1200 and IS1500. Each course has more than 200 participants each semester.
- 2018** Examiner and course responsible for the course IS1200 and IS1500. Each course has more than 200 participants each semester.
- 2018** Teaching a lecture on the lambda calculus in the Master’s course, “Principles of Programming Languages”, DD2481.
- 2018** Examiner and course responsible for IK3620, a PhD level course on “Types, Semantics, and Programming Languages”.
- 2017** Examiner and course responsible for the course IS1200 and IS1500. Each course has more than 200 participants each semester.
- 2016** Examiner and course responsible for IK3620, a PhD level course on “Types, Semantics, and Programming Languages”.
- 2016** Examiner and course responsible for the course IS1200 and IS1500. Each course has more than 200 participants each semester.
- 2015** Examiner and course responsible for the course IS1200, “Computer Hardware Engineering”, KTH Royal Institute of Technology, Sweden.

- 2014** Examiner and course responsible for the course IS1500, “Computer Organization and Components”, KTH Royal Institute of Technology, Sweden.
- 2014** Guest lecturer in the course “Concurrent Models of Computations”, EECS 219D, University of California, Berkeley.
- 2013** Guest lecturer in the course “Fundamental Algorithms for System Modeling, Analysis, and Optimization”, EECS 144/244, University of California, Berkeley.
- 2011** Examiner, lecturer, and course responsible for the software engineering course TDDC88. Average grade 4.28 of 5.0 by official student evaluation. Linköping University, Sweden.
- 2010** Lecturer and course responsible for a Ph.D. level course in Functional Programming.
- 2009** Examiner, lecturer, and course responsible for the software engineering course TDDC88. Average grade 4.44 of 5.0 by official student evaluation. Linköping University, Sweden.
- 2009-2011** Annually guest lecturer on course TDDD36, Linköping University, Sweden
- 2007** Examiner and course responsible for software engineering courses TDDC88 and TDDC93. Developed a new course from start.
- 2005-2006** Teaching assistant in algorithms and optimization (TDDDB56) and supervisor for software engineering projects (TDDC02).

## Pedagogical Education

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- 2015** *Supervision and Assessment of Degree Project Work in First and Second Cycle* (3 credits), KTH Sweden
- 2015** *Development the Learning by using Grading Criteria*, LH216V (1.5 credits), KTH, Sweden
- 2011** *Teaching in Higher Education, Step 3. Supervision in Doctoral Studies* (4 credits), Linköping University, Sweden
- 2011** *Teaching in Higher Education, Step 2. Design, Evaluation, and Organization of Learning* (6 credits), Linköping University, Sweden
- 2008** *Teaching in Higher Education, Step 1. Learning, Teaching and Knowledge* (6 credits), Linköping University, Sweden.

## Administrative Experience

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- 2016** Local Arrangements Co-Chair of the 2016 International IEEE Symposium on Precision Clock Synchronization for Measurement, Control and Communication (ISPCS), Stockholm, Sweden, September 4-9, 2016.
- 2014** PC Chair of the 6<sup>th</sup> International Workshop on Equation-Based Modeling Languages and Tools (EOLTL 2015), October 10, Berlin, Germany.
- 2013** Co-Chair of the 4<sup>th</sup> international he Third Analytic Virtual Integration of Cyber-Physical Systems Workshop (AVICPS 2013), co-located with RTSS 2013, Vancouver, Canada.
- 2012** Organized break-out sessions and co-authored the report from at the NITRD National Workshop on The New Clockwork for Time-Critical Cyber-Physical Systems, Baltimore, Maryland, USA.
- 2012-** Organizer of the weekly DREAM (Design of Robotics and Embedded systems, Analysis, and Modeling) seminar series at the EECS (Electrical Engineering and Computer Science) department at UC Berkeley.
- 2011** Co-designer of the doctoral mentor program at computer and information science department, Linköping University.
- 2007-2009** Organizer of the international workshop equation-based object oriented languages and tools (3 occasions: EOLTL 2007, 2008, and 2010).

## Leadership

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- 2017** Invited as a Future Leader to the 14<sup>th</sup> STS Forum, Kyoto, Japan
- 2016-** Leader of the Model-based Computing Systems (MCS) research group at KTH Royal Institute of Technology. <http://www.kth.se/ict/mcs>
- 2014-** Organizing a larger undergraduate course (over 200 students) each semester that involves 6-12 teachers and assistants.
- 2015** Selected to take the leadership training course “Management for Associate Professors”
- 2012-2014** Coordinating a research effort at UC Berkeley. Mentoring and coordinating three PhD students.
- 2001-2005** Technical project manager for several projects at Columbitech AB.
- 1999** Military service. Excellent recommendations about leadership capability.

## Certifications

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- 2009-2012** **Certified ScrumMaster (CSM)**  
See: <http://www.scrumalliance.org/>
- 2005-2012** **Certified Information Systems Security Professional (CISSP®)**  
CISSP is a vendor-neutral certification that requires 4 years of professional experience in the field of information security. It is governed by the International Information Systems Security Certification Consortium (ISC2) and is considered one of the premiere security certifications.  
See: <https://www.isc2.org/>

## Research Grants and Scholarships

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- 2019-** Internal KTH project, sponsored by KTH and by the SRA ICT TNG: *DLL: Data-Limited Learning of Complex Dynamical Systems*. The project is a collaboration between five co-PIs: David Broman (main PI), Saikat Chatterjee, Veronique Chotteau, Håkan Hjalmarsson, and Alexandre Proutiere.
- 2019-2025** Wallenberg AI, Autonomous Systems and Software Program (area WASP-AI) and funds two PhD students (one at KTH and one in Uppsala): *Deep Probabilistic Neural Networks for Survival Analysis*. Collaboration project between two co-PIs: David Broman (KTH) and Thomas Schön (Uppsala University).
- 2019-2021** Wallenberg AI, Autonomous Systems and Software Program (area WASP-AS) funded expedition project: *High-Confidence Formal Verification of Real Cyber-Physical Systems: from Models to Machine Code*. Funds 2 postdocs at KTH. Two partners: David Broman (KTH) and Magnus Myreen (Chalmers).
- 2018-2023** Individual grant: *Differentiable Probabilistic Programming Languages*, 4.1 milj. SEK, awarded by the Swedish Research Council (VR).
- 2017-2021** Individual grant: *Future Research Leader (FFL-6, Framtidens forskningsledare)*, awarded by the Swedish foundation for strategic research (SSF). 12 milj. SEK for a 5-year project. Project title: “Heterogeneous Model Compilers for Uncertain Environments”.
- 2016-2021** Swedish foundation for strategic research (SSF) grant within *Smart Systems*. Project title: “Automating System SpEcific Model-Based Learning – ASSEMBLE”. In total 29 milj SEK, which is shared between 4 partners. Main PI: Thomas Schön (Uppsala University). Co-applicants: David Broman (KTH), David Black-Schaffer (Uppsala), and Joakim Jaldén (KTH).
- 2014-2015** The Swedish Research Council’s home coming grant (1 year grant).
- 2013** RIPPE (Rigorous Programming of Predictable Embedded Systems) associate project team. Grant awarded by Inria, France. Collaboration between UC Berkeley, Inria, and University of Auckland. Co-author of proposal. Principle investigator at Inria: Alain Girault.

- 2011-2013** The Swedish Research Council's Postdoctoral Fellowship  
(Postdoc at UC Berkeley, CA, USA). Personal grant. Fulltime funding for 2 years.
- 2010-2011** ELLIIT Postdoctoral Grant, Two internal grants. Linköping University.
- 2008** CUGS (National computer science graduate school). Grant for guest research in Colorado.
- 2007** Knut och Alice Wallenbergs jubileumsfond (Scholarship for guest research, Boulder).

## Ph.D. Committee and Evaluations Assignments

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- 2017** Alejandro Marzinotto, KTH Royal Institute of Technology (Examination committee)
- 2016** Adam Duracz, Halmstad University (Examination committee).
- 2016** Jonas Westman, KTH Royal Institute of Technology (Examination committee).
- 2016** Andreas Gustavsson, Mälardalen University (Opponent).
- 2015** Ananya Muddykrishna, KTH Royal Institute of Technology (Internal Quality Review).
- 2015** Pehr Söderman, KTH Royal Institute of Technology (Internal Quality Review).

## Program Chair and Organizing Committees

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- 2016** PC Track Chair of the 22nd IEEE Real-Time Embedded Technology & Application Symposium (RTAS), Vienna, Austria, April 11-14, 2016.
- 2016** Local Arrangements Co-Chair of the 2016 International IEEE Symposium on Precision Clock Synchronization for Measurement, Control and Communication (ISPCS), Stockholm, Sweden, September 4-9, 2016.
- 2014** PC Chair of the 6<sup>th</sup> International Workshop on Equation-Based Modeling Languages and Tools (EOOLT 2015), October 10, Berlin, Germany.
- 2013** Co-chair of the 4<sup>th</sup> Analytic Virtual Integration of Cyber-Physical Systems Workshop (AVICPS 2013), Vancouver, Canada (co-location with RTSS)
- 2011** Co-chair of 4th International Conference on Equation-Based Object-Oriented Modeling Languages and Tools (EOOLT 2011), Zürich, Switzerland.
- 2010** Co-chair of the 3rd International Conference on Equation-Based Object-Oriented Modeling Languages and Tools (EOOLT 2010), Oslo, Norway.
- 2008** Co-chair of the 2nd International Conference on Equation-Based Object-Oriented Languages and Tools (EOOLT 2008), Paphos, Cyprus.
- 2007** Organizing committee of the first International Conference on Equation-Based Object-Oriented Modeling Languages and Tools (EOOLT 2007), Berlin, Germany.

## Program Committee Member

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- 2020** PC member of the 24st IEEE Real-Time and Embedded Technology and Applications Symposium (RTAS), Sidney, Australia.
- 2019** PC member of the 8th International Workshop on Equation-Based Object-Oriented Modeling Languages and Tools (EOOLT), Berlin, Germany.
- 2019** PC member of the 13th International Modelica Conference, Regensburg, Germany
- 2019** PC member of the Forum on specification & Design Languages (FDL), Southampton, United Kingdom.
- 2018** PC member of the 24th IEEE Real-Time and Embedded Technology and Applications Symposium (RTAS), Porto, Portugal.
- 2018** PC member of the American Modelica Conference, Cambridge, MA, USA
- 2018** PC member of the ACM SIGBED International Conference on Embedded Software (EMSOFT), Torino, Italy.

- 2017** PC member of the Forum on specification & Design Languages (FDL), September 18-20, Verona, Italy.
- 2017** PC member of the 7th International Workshop on Equation-Based Object-Oriented Modeling Languages and Tools (EOOLT), Munich, Germany, December 1.
- 2017** PC member of the The ACM SIGBED International Conference on Embedded Software (EMSOFT), Seoul, South Korea, October 15-20.
- 2017** PC member of the Symposium on Theory of Modeling and Simulation (TMS/DEVS), Virginia Beach, VA, USA, April 23-26.
- 2017** PC member of the 12th International Modelica Conference, Prague, Czech Republic, May 15-17.
- 2017** PC member of the 20th IEEE International Symposium on Real-Time Computing (ISORC), Toronto, Canada, May 16-18.
- 2017** PC member of the 23st IEEE Real-Time and Embedded Technology and Applications Symposium (RTAS), Pittsburgh, PA, USA.
- 2016** PC member of the Workshop on Embedded and Cyber-Physical Systems Education (WESE), Pittsburg, USA.
- 2016** PC member of the IEEE International Conference on Cyber-Physical Systems, Networks, and Applications (CPSNA).
- 2016** PC member of the ACM SIGBED International Conference on Embedded Software (EMSOFT), Pittsburgh, PA, USA.
- 2016** PC member of the 11th IEEE International Symposium on Industrial Embedded Systems (SIES), Krakow, Poland.
- 2016** PC member of 7th International Workshop on Equation-Based Object-Oriented Modeling Languages and Tools (EOOLT), Milano, Italy.
- 2016** PC member of the 31th ACM/SIGAPP Symposiym on Applied Computing (SAC), Embedded Systems Track, Pisa, Italy.
- 2015** PC member of the Workshop on Embedded and Cyber-Physical Systems Education (WESE), Amsterdam, Netherlands.
- 2015** PC member of the Fourth International Workshop on Formal Techniques for Safety-Critical Systems (FTSCS), Paris, France.
- 2015** PC member of the The First Workshop on Declarative Programming for Real-Time and Cyber-Physical Systems (DPRTCPS), San Antonio, Texas, USA.
- 2015** PC member of the 3rd International Workshop on Mixed Criticality Systems (WMC), San Antonio, Texas, USA.
- 2015** PC member of the 12th IEEE International Conference on Embedded Software Systems (ICESS), New York, USA.
- 2015** PC member of the ACM SIGPLAN International Workshop on Functional Art, Music, Modelling and Design (FARM), co-located with ICFP, Vancouver, Canada.
- 2015** PC member of the 11th International Modelica Conference, Paris, France.
- 2015** PC member of the 10th IEEE International Symposium on Industrial Embedded Systems (SIES 2015), June 8-10, 2015.
- 2015** PC member of the 21st IEEE Real-Time and Embedded Technology and Applications Symposium (RTAS), Seattle, Washington.
- 2015** PC member of the 28th GI/ITG International Conference on Architecture of Computing Systems (ARCS), Porto, Portugal.
- 2015** PC member of the 30th ACM/SIGAPP Symposiym on Applied Computing (SAC), Embedded Systems Track, Salamanca, Spain.
- 2014** PC member of the International Conference on ReConFigurable Computing and FPGAs (ReConFig), Cancun, Mexico.
- 2014** PC member of the Workshop on Embedded and Cyber-Physical Systems Education (WESE), Delhi, India.
- 2014** PC member of the IEEE Real-Time Systems Symposium (RTSS), Rome, Italy.
- 2014** PC member of the Reconciling Performance with Predictability Workshop (RePP)



- Workshop, Grenoble, France.
- 2014** PC member of the 10th International Modelica Conference, 2014, Lund, Sweden.
- 2014** PC member of the Fourth Workshop on Design, Modeling and Evaluation of Cyber Physical Systems (CyPhy 2014), co-located with CPSWEEK, Berlin, Germany.
- 2014** PC member of the 27th Conference on Software Engineering Education and Training (CSEE&T 2014), Alpen-Adria Universität Klagenfurt, Austria.
- 2013** PC member of the ACM SIGAda's Annual International Conference High Integrity Language Technology (HILT 2013), Pittsburgh, Pennsylvania, USA.
- 2013** PC member of the 26th Conference on Software Engineering Education and Training (CSEE&T 2013), San Francisco, California, USA.
- 2013** PC member of the 5th International Workshop on Equation-Based Object-Oriented Modeling Languages and Tools (EOOLT 2013), Nottingham, UK.
- 2013** PC member of the 3rd Workshop on Design, Modeling and Evaluation of Cyber Physical Systems (CyPhy 2013), Philadelphia, USA.
- 2013** PC member of the 19th IEEE Real-Time and Embedded Technology and Applications Symposium (RTAS 2013), Philadelphia, USA.
- 2012** PC member of the Third Analytic Virtual Integration of Cyber-Physical Systems Workshop (AVICPS 2012), San Juan, Puerto Rico, 2012.
- 2012** PC member of the 9th International Modelica Conference, Munich, Germany, 2012
- 2012** PC member of the Second Workshop on the Design, Modeling and Evaluation of Cyber Physical Systems (CyPhy 2012), Halmstad, Sweden, 2012.
- 2012** PC member of the 25th IEEE-CS Conference on Software Engineering Education and Training (CSEE&T 2012), Nanjing, Jiangsu, China, 2012.
- 2011** PC member of the First IEEE Workshop on the Design, Modeling and Evaluation of Cyber Physical Systems (CyPhy 2011), Istanbul, Turkey.
- 2011** PC member of 4th International Conference on Equation-Based Object-Oriented Modeling Languages and Tools (EOOLT 2011), Zürich, Switzerland.
- 2011** PC member of the 24th IEEE-CS Conference on Software Engineering Education and Training (CSEE&T 2011), Waikiki, Honolulu, Hawaii.
- 2010** PC member of the 3rd International Conference on Equation-Based Object-Oriented Modeling Languages and Tools (EOOLT 2010), Oslo, Norway.
- 2008** PC member of the 2nd International Conference on Equation-Based Object-Oriented Languages and Tools (EOOLT 2008), Paphos, Cyprus.

## Invited Keynotes and Panels

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- 2019** Invited keynote speaker at the Forum on specification & Design Languages (FDL), Southampton, United Kingdom.
- 2013** Invited keynote speaker at the Fourth International Symposium on Highly Efficient Accelerators and Reconfigurable Technologies (HEART), Edinburgh, Scotland.
- 2013** Invited panel speaker at the Electronic System Level Synthesis Conference (ESLsyn 2013), Austin, Texas, USA.

## Invited Talks

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- 2019** Invited talk at IFIP WG 2.4 meeting, Paihia, Bay of Islands, New Zealand.
- 2018** Invited talk at the National University of Singapore (NUS), Singapore.
- 2018** Invited talk at the Max Planck Institute for Software Systems (MPI-SWS), Kaiserslautern, Germany.
- 2017** Invited talk at IFIP WG 2.4 meeting, Essex, Vermont.
- 2016** Invited talk at the SICS Smart Programming Day, Stockholm

- 2016 Invited talk at Saarland University, Saarbrücken, Germany
- 2016 Invited talk at the School of Electrical Engineering, KTH, Sweden
- 2016 Invited talk at MODPROD, Linköping, Sweden.
- 2015 Invited talk at Intel, Oregon, USA.
- 2015 Invited talk at Dagstuhl, Germany.
- 2014 Invited talk at ÅF, Stockholm, Sweden.
- 2014 Invited talk at National Instruments, Berkeley, California, USA.
- 2014 Invited talk at Google, Mountain View, California, USA.
- 2014 Invited talk at RePP, Grenoble, France.
- 2014 Invited talk at IFIP WG 2.4, Asilomar, California, USA.
- 2013 Invited talk at SYNCHRON Workshop, Dagstuhl, Germany.
- 2013 Invited talk at Carnegie Mellon University (CMU), Silicon Valley Campus, California, USA.
- 2013 Invited talk at KTH, Royal institute of technology, Stockholm, Sweden.
- 2013 Invited talk at Uppsala University, Uppsala, Sweden.
- 2013 Invited talk at the IFIP working group 2.4 meeting, Mysore, India.
- 2012 Invited talk at the NITRD National Workshop on The New Clockwork for Time-Critical Cyber-Physical Systems, Baltimore, Maryland, USA.
- 2012 Invited talk at TU Vienna, Austria.
- 2012 Invited talk at University of Salzburg, Austria.
- 2012 Invited talk at the RAWFP workshop, Gothenburg, Sweden.
- 2012 Invited talk at the IFIP working group 2.4 meeting, Vadstena, Sweden.
- 2011 Invited talk at University of California, Berkeley, EECS Department.
- 2011 Invited talk at Technische Universität Berlin, Germany.
- 2011 Invited talk at University of California, Berkeley, EECS Department.
- 2012 Invited talk at the IFIP working group 2.4 meeting, Cape May, USA.
- 2010 Invited talk at the Workshop on Model-Based Product Development, Linköping, Sweden.
- 2009 Invited talk at Volvo Cars, Gothenburg, Sweden.
- 2008 Invited talk at University of Colorado at Boulder, Colorado, USA.
- 2006 Invited talk at Microsoft Corporation, Redmond, USA.

## Tutorials and Mini-Courses

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- 2019 Invited lectures at the PDC Summer School, KTH, Sweden.
- 2009 Invited tutorial “Modelica Tutorial - Modeling and Simulation with OpenModelica and MathModelica” at the 7<sup>th</sup> Vienna International Conference on Mathematical Modeling (MATHMOD), Vienna, Austria.
- 2014 Invited two days course at Scuola Superiore Sant’Anna, Pisa, Italy. “Principles of Equation-Based Object-Oriented Modeling and Languages”

## Grant Reviewing

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- 2015 Vinnova. Part of the review panel for a major grant application.

## Journal Reviewing

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- 2009- I have been reviewer for several international journals. I have been given a review assignment from each of the following journals: Foundations and Trends in Machine Learning, IEEE Transactions on Computers (IEEE), Transactions on Embedded Computing Systems (ACM), Journal of Systems Architecture (Elsevier), Leibniz Transactions on Embedded Systems (EDAA/EMSIG/Dagstuhl), Sensors (MDPI), Journal Simulation Modelling Practice and Theory (Elsevier), and ACM Transactions on Cyber-Physical Systems (ACM).

## International Collaborators (published or submitted joint work)

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- **Patricia Derler**, National Instruments, USA
- **John C. Eidson**, University of California, Berkeley, USA.
- **Lev Greenberg**, IBM Research, Israel.
- **Reinhard von Hanxleden**, Kiel University, Germany.
- **Bob Iannucci**, Carnegie Mellon University, Silicon Valley Campus, USA.
- **Edward A. Lee**, University of California, Berkeley, USA.
- **Michael Masin**, IBM Research, Israel.
- **Henrik Nilsson**, University of Nottingham, UK.
- **Partha S. Roop**, University of Auckland, New Zealand.
- **Sanjit Seshia**, University of California, Berkeley, USA.
- **Aviral Shrivastava**, Arizona State University, USA.
- **Jeremy G. Siek**, Indiana University, USA.
- **Kevin Stanton**, Intel Corporation, USA.
- **Stavros Tripakis**, University of California, Berkeley, USA.
- **Marc Weiss**, NIST, USA.
- **Michael Wetter**, Lawrence Berkeley National Laboratory, USA.

## National Collaborators (published or submitted joint work)

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- **Kristian Sandahl**, Linköping University, Sweden.
- **Peter Fritzson**, Linköping University, Sweden.
- **Mattias Villani**, Linköping University, Sweden.
- **Martin Törngren**, KTH, Sweden.
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## Publications

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See <http://people.kth.se/~dbro/pub.html>