

## CV: Prof. Lars M. Kristensen, PhD

### Personal Information

Name: Lars M. Kristensen  
Civil status: Married, two children  
Email: [lmkr@hib.no](mailto:lmkr@hib.no)

Date of Birth: September 1, 1971  
Nationality: Danish  
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### Degrees

- MSc in Computer Science and Mathematics, University of Aarhus, Denmark, June 1997.
- PhD in Computer Science, University of Aarhus, Denmark, April 2000.

### Academic Career

02/2009 – present Professor, Department of Computing, Bergen University College.  
07/2007 – 01/2009 Associate Professor, Dept. of Comp. Science, University of Aarhus.  
04/2005 – 06/2007 Research Associate Professor, Dept. of Comp. Science, University of Aarhus.  
09/2002 – 03/2005 Research Assistant Professor, Dept. of Comp. Science, University of Aarhus.  
08/2000 – 08/2002 Research Fellow, Computer Systems Engineering Centre, University of South Australia / Australian Defence Science and Technology Organisation.  
02/2000 – 08/2000 Research Assistant Professor, Dept. of Comp. Science, University of Aarhus.

### Research Projects and Grants

- L.M. Kristensen, H. Meling, Y. Lamo, and U. Wolter. Model-based Development Techniques for Reliable Distributed Software Systems. Partner Investigator. Pre-project funding from UHnett Vest. 80 KNOK, 2014-2015.
- T. Røkenes, L.M. Kristensen, P. Trefall, and R. Herheim. *The SIMSubsea game-based Learning Application*. **Partner Investigator**. Supported by Bergen University College, One Subsea, Aker Solutions, FMC Technologies, NCE Subsea. 2.5 MNOK, 2013-2016.
- T. Ågotnes, H. Helstrup, Y. Lamo, and L.M. Kristensen. *FormGRID: Formal Verification of GRID Systems*. **Partner Investigator**. Supported by the Norwegian Research Council. NOK 4,100,000. 2010 – 2014.
- K. Grønæk, L.M. Kristensen, K.M. Hansen, and L.A. Arge. *A Platform for Galileo Based Pervasive Positioning*. **Joint Primary Investigator**. Supported by the Danish National Advanced Technology Foundation. DKR 5,800,000 (University of Aarhus part). 2007 – 2010.
- L.M. Kristensen. *SensoByg : Sensor-based Surveillance in the Construction Industry*. **Primary Investigator**. Innovation consortium supported by the Danish Agency for Science, Technology and Innovation. DKR 1,800,000 (University of Aarhus part). 2007 – 2010.
- L.M. Kristensen. *Advanced State Space Methods and Computer Tools for Verification of Communication Protocols*. **Primary Investigator**. Project Grant. Danish Research Council for Technology and Production. DKR 4,000,000. 2006 – 2009.
- L.M. Kristensen, I. Thysen, J. Pagter, B. Magnussen, L. Personen, M. Gilbertsson, and T. Bak. *Mobile Internet Services for Online Support of Agricultural Machinery*. **Joint Primary Investigator**. Nordunet 3 Programme of the Nordic Natural Science Research Council. DKR 1,500,000. 2006 – 2009.
- L.M. Kristensen. *Development and Validation of Communication Protocols for Mobile Ad-hoc Networking*. **Primary Investigator**. Carlsberg Foundation. DKR 1,100,000. 2005 – 2007.
- K.M. Hansen and L.M. Kristensen. *Architecture for Communication between Mobile and Stationary Devices*. **Joint Primary Investigator**. Project Grant from ISIS Katrinebjerg. DKR 2,800,000. 2003 – 2006.
- L.M. Kristensen. *Formal Methods and Computer Tools for the Development of Communication Protocols*. **Primary Investigator**. Steno Grant. Danish Natural Science Research Council. DKR 1,771,000. 2002 – 2005.

- J. Billington and L.M. Kristensen. *Sweep-line State Space Methods for the Verification of Concurrent and Distributed Systems*. **Primary Researcher**. Discovery Grant from the Australian Research Council. 2001 – 2004.
- L.M. Kristensen. *Information Infrastructure for Electronic Commerce*. **Primary Investigator**. Post Doc. Grant. Danish Natural Science Research Council. DKR 210,000. 2001 – 2002.

### **Selected Programme, Steering Committees, and Editorial Boards**

- International Conference on Application and Theory of Petri Nets and Other Models of Concurrency, 2002, 2007, 2008, 2009, 2010, 2011 (PC co-chair), 2012, 2015, 2016.
- Workshop and tutorial co-chair for ICATPN 2017 and 2018.
- French Singaporean Workshop on Formal Methods and Applications, 2013, 2014
- International Workshop on Petri Nets and Software Engineering, 2009-2016.
- IEEE International Conference on Mobile Ad-hoc and Sensor Systems, 2011, 2012.
- International Workshop on Sensor Networks and Ambient Intelligence, 2008, 2009, 2012, 2013
- International Workshop on Network Simulation Tools, 2009.
- International Workshop on Localized Algorithms and Protocols for Wireless Sensor Networks, 2007, 2009.
- European Conference on Modelling and Simulation, 2008.
- International Conference on Distributed Computing, Applications and Technologies, 2008.
- International Workshop on Petri Nets and Distributed Systems, 2008
- International Workshop on Teaching Concurrency, 2007.
- International SPIN Workshop on Model Checking of Software, 2006.
- Guest co-editor on special issue of *Fundamenta Informaticae* journal based on Petri Nets 2011.
- Guest co-editor on special volume of the LNCS Transaction on Petri Nets and Other Models of Concurrency on Protocols, Networks, and Services, 2012
- Member of the editorial board for Transactions on Petri Nets and Other Models of Concurrency (ToPNoC), a subseries of Lecture Notes in Computer Science (LNCS) published by Springer.
- Member of the steering committee for the International Conference on Application and Theory of Petri Nets and Concurrency.
- Member of the steering committee for the Norwegian Informatics Conference.
- Reviewer for more than 30 international journals, conferences, and workshops.
- Reader of Grant Applications for the Czech and Swiss Science Foundation.

### **Bachelor and Master's Thesis Supervision:**

- Supervision of two honors thesis at University of South Australia, three bachelor projects at Bergen University College, 23 master's theses in Computer Science at University of Aarhus, 7 master's theses in software engineering at Bergen University College, and currently supervising five master's projects at Bergen University College.

### **PhD Supervision and Examination:**

- Currently supervising two research fellows within concurrent software systems modeling and verification at Bergen University College. Expected completion 2016 and 2017.
- Kent. I.F. Simonsen: *Code Generation from Pragmatics Annotated Coloured Petri Nets*. Degree awarded 2014.
- M.T. Hansen. *Efficient Protocols and Middleware for Sensor Networks*. 2008-2009 (supervision ended with move to Bergen University College). Degree awarded 2012.
- J. Andersen. *Medical Sensor Network Infrastructures*. 2006-2010. Degree awarded 2010.
- J. Brøndsted. *Software Architecture and Communication in Mobile Environments*, University of Aarhus, 2004-2008. Supervised with K.M. Hansen. Degree awarded 2008.
- M. Westergaard. *Model Checking and State Space Methods*. University of Aarhus, 2003-2007. Jointly supervised with K. Jensen. Degree awarded 2007.

- C. Ouyang. *The Internet Open Trading Protocol*. University of South Australia, 2000-2002. Co-supervised with Prof. Jonathan Billington. Degree awarded 2004.
- Associate supervisor for Ph.D. students: S. Gordon, L. Liu, B. Han, and A. Singh, University of South Australia, 2000-2002. Main supervisor was Prof. Jonathan Billington.
- Examiner (opponent) on 14 PhD theses (Denmark, Germany, Australia, Norway, Pakistan)

### **Research Management and Administrative Experience**

- Acting Deputy Dean of Research at the Faculty of Engineering, Bergen University College, November 2013 – April 2014.
- Director of the strategic research program on Software Technologies for Distributed Systems at Bergen University College, 2009 – present
- Member of the steering committee for the HiB-UiB joint master's degree in software engineering, 2012-present
- Member of the teaching committee for the Bachelor Programme in Computing and Information Technology at Bergen University College, 2012 – present
- Completed 3x3 day Research Leadership Programme organised by the research administration of University of Oslo, November 2011 – March 2012.
- Chair of the teaching committee for the Bachelor Programme in Computing and Information Technology at Bergen University College, 2010 - 2012
- Member of the PhD committee, Computer Science Department, Aarhus University, 2007-2009.
- Member of the teaching committee for technical IT, electrical, and optical engineering, Aarhus Graduate School of Engineering (2008-2009).
- Member of the Danish Censor Corpus for Computer Science, 2006-2009.
- Member of the steering committee for the SensoByg innovation consortium under the Danish Agency for Science, Technology, and Innovation, 2007-2009.
- Member of the Departmental Advisory Board, Department of Computer Science, University of Aarhus, 2004- 2009.

### **Awards**

The Research and Development Prize of Bergen University College, 2012. The prize is awarded to researchers at Bergen University College that have succeeded in research and development work of high quality in a regional and in an international context.

The Danish Independent Research Councils' Young Researcher's Award, 2007. The award was given in relation to the project *Advanced State Space Methods and Computer Tools for Verification of Communication Protocols*. The award is given to talented young researchers below the age of 35 who have earned recognition for their work to such an extent that is unusual for their age.

### **Selected Invited Talks and Tutorials**

1. Coloured Petri Nets: Modeling and Analysis. Part of PhD school of the ICATPN conference, Hamburg (2012), Milano (2013), Tunis (2014), Brussels (2015), Torun (2016)
2. A Pragmatic Approach to Automated Code Generation from CPN Simulation Models. Invited talk at SimuTools'14.
3. An Approach for the Engineering of Protocol Software from Coloured Petri Net Models: A Case Study of the IETF WebSocket Protocol. Invited talk at PNSE'14.
4. L.M. Kristensen. State Spaces and Protocol Verification. Invited lecture shared with W. Penczek at the 5<sup>th</sup> Advanced Course and PhD School on Petri Nets, Rostock, Germany, 2010.
5. L.M. Kristensen. Explicit State Space Exploration of Coloured Petri Nets: Past, Present, and Future. Invited talk at ICATPN'2010, Braga, Portugal, 2010.

6. L.M. Kristensen. The ASAP Platform: Next Generation Tool Support for State Space Analysis of CPN Models. Invited talk at International Workshop on Petri Nets and Distributed Systems, Xian, China, 2008.

### Selected Publications (2010 – 2015)

Google scholar summary: Citations = 3953 and h-index = 23 [<http://scholar.google.com/citations?user=-fTtjIAAAAJ&hl=en>]

### Textbooks and proceedings

1. L.M. Kristensen, W. Penczek, and L. Petrucci. Application and Theory of Petri Nets, Special issue of Fundamenta Informaticae, Vol. 122, No-1-2, IOS Press, 2013. **Level 1.**
2. Wil M. van der Aalst, M. Ajmone Marsan, G. Franceschinis, J. Kleijn, L.M. Kristensen (Eds). Transactions on Petri Nets and Other Models of Concurrency VI. Special issue on Best Papers from Petri Nets 2012 with special section on Networks, Protocols, and Services. Subseries of Lecture Notes in Computer Science, LNCS Vol 7400, Springer, 2012. **Level 1.**
3. L.M. Kristensen and L. Petrucci (Eds.). Proc. of 32<sup>nd</sup> International Conference on Application and Theory of Petri Nets and Other Models of Concurrency. Vol. 6709 of Springer Lectures Notes in Computer Science, 2011. **Level 1.**
4. K. Jensen and L.M. Kristensen. *Coloured Petri Nets – Modelling and Validation of Concurrent Systems*. Springer, July 2009. **Level 1.**

### Peer-reviewed journals paper (Level 1 or Level 2 publications)

1. K. Jensen and L.M. Kristensen. Coloured Petri Nets: A Graphical Language for Formal Modelling of Concurrent Systems. Accepted for Communications of the ACM, ACM Press, 2015. **Level 2.**
2. A. Kumar, L.M. Kristensen, and K. Ovsthus. An Industrial Perspective on Wireless Sensor Networks - A Survey of Requirements, Protocols, and Challenges. In Vol. 16, Issue 3 of IEEE Communications Survey and Tutorials, pp. 1391-1412, 2014. **Level 1.**
3. S. Evangelista and L.M. Kristensen. A Sweep-Line Method for Buchi Automata-based Model Checking. In Vol. 131, Issue 1 of Fundamenta Informaticae, IOS Press, 2014. **Level 1**
4. S. Evangelista and L.M. Kristensen. Dynamic State Space Partitioning for External Memory State Space Exploration. Vol. 78, Issue 7 of Science of Computer Programming, pp. 778-795, Elsevier, 2013. **Level 2**
5. L.M. Kristensen and K. Simonsen. Application of Coloured Petri Nets for Functional Validation of Protocol Designs. In Transactions on Petri Nets and Other Models of Concurrency, LNCS Vol. 7480, pp. 56-115, Springer, 2013. **Level 1.**
6. K. Jensen, L.M. Kristensen, and T. Mailund. The Sweep-line State Space Exploration Method. In Theoretical Computer Science, Elsevier, 2012 (in press). **Level 2**
7. M. Westergaard and L.M. Kristensen. A Graphical Approach to Component-based and Extensible Model Checking Platforms. Accepted for LNCS Transactions on Petri Nets and Other Models of Concurrency, Springer, 2011. **Level 1.**
8. S. Evangelista and L.M. Kristensen. Search-Order Independent State Caching. In LNCS Transactions on Petri Nets and Other Models of Concurrency. Vol 4, pp. 21-41, Springer, 2010. **Level 1.**

### Peer-reviewed conference papers (All level 1 publications)

1. F. Rabbi, Y. Lamo, I. Yu, and L.M. Kristensen. Towards a Multi Metamodelling Approach for Developing Distributed Healthcare Applications. In Proc. of Norwegian Informatics Conference, 2015.
2. F. Rabbi, Y. Lamo, I. Yu, and L.M. Kristensen. A Diagrammatic Approach to Model Completion. In Proc. of AMT 2015. Vol. 1500 of CEUR Workshop Proceedings, pp. 56-65, 2015.
3. L.M. Kristensen, K. I.F. Simonsen, and E. Kindler. Pragmatics Annotated Coloured Petri Nets for Protocol Software Generation. In Proc. of PNSE'2015. Vol. 1372 of CEUR Workshop Proceedings, pp. 79-98, 2015.
4. A. Kumar, A. Prinz, and L.M. Kristensen. Model-based Verification of the DMAMAC Protocol for Real-time Process Control. Proc. of VECoS 2015. Vol. 1431 of CEUR Workshop Proceedings, pp. 81-96, 2015.
5. A. Kumar, K. Ovsthus, and L.M. Kristensen. Towards a Dual-mode Adaptive MAC Protocol (DMA-MAC) for Feedback-based Networked Control Systems. In Procedia Computer Science, 2014, Vol. 34, pp. 505-510.
6. K. Simonsen and L.M. Kristensen. Implementing the WebSocket Protocol based on Formal Modelling and Automated Code Generation. In Proc. of IFIP Conference on Distributed Systems and Interoperable Systems. Vol. 8460 of LNCS, pp. 104-118, Springer, 2014.
7. K. Simonsen, E. Kindler, and L.M. Kristensen. Generating Protocol Software from CPN Models annotated with Pragmatics. In Proc. of SBMF'13. Vol. 8295 of Lecture Notes in Computer Science, pp. 227-242, Springer 2013.
8. S. Evangelista, L.M. Kristensen, and L. Petrucci. Multi-threaded Explicit State Space Exploration with State Reconstruction. In Proc. of ATVA'2013. Vol. 8172 of Lecture Notes in Computer Science, pp. 208-223, 2013.
9. K. Simonsen and L.M. Kristensen. Towards a CPN-based Modelling Approach for Reconciling Verification and Implementation of Protocol Models. In Proc. of 8th International Workshop on Model-based Methodologies for Pervasive and Embedded Software. LNCS Vol. 7706, pp. 106-125, Springer, 2013.
10. S. Evangelista and L.M. Kristensen. Hybrid LTL Model Checking with the Sweep-Line Method. Accepted for International Conference on Application and Theory of Petri Nets (ICATPN), Proceedings published in LNCS series, Springer, 2012.
11. S. Taktak and L.M. Kristensen. Formal Modelling and Initial Validation of the Chelonia Distributed Storage System: In Proc. of International Conference on Grid and Pervasive Computing. Vol. 6646 of LNCS, pp 127-137, Springer, 2011.

12. L.M. Kristensen: A Perspective on Explicit State Space Exploration of Coloured Petri Nets: Past, Present, and Future. In Proc. of ICATPN'10, Vol. 6128 of LNCS, pp. 39-42, Springer, 2010. Invited talk
13. M. Westergaard, L.M. Kristensen, and M. Kuusela. Towards Cosimulating SystemC and Coloured Petri Net Models for SoC Functional and Performance Evaluation. In Proc. of 21<sup>st</sup> European Modeling and Simulation Symposium. September 2009.
14. L. M. Kristensen and M. Westergaard: Automatic Structure-Based Code Generation from Coloured Petri Nets: A Proof of Concept. In Formal Methods for Industrial Critical Systems (FMICS), Vol. 6371 of LNCS, pp. 215-230, Springer, 2010.