

CURRICULUM VITAE

Dr Martin Boldt

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Appointments

2019-present Associated professor, Department of Computer Science, BTH.
 2010-2019 Assistant professor, Department of Computer Science, BTH.
 2005-2010 PhD student (50%), School of Computing, BTH.
 2005-2010 Adjunct teacher (50%), School of Computing, BTH.
 2002-2005 Teacher assistant, School of Computing, BTH.
 2001-2002 Software developer at CellPoint Systems, Sweden.

Professional preparation

2005-2010 PhD in Computer Science with emphasis on Information Security, BTH.
 2002-2003 Master in Software Engineering at BTH.
 1998-2001 Bachelor in Software Engineering at BTH.

Theses titles

2010 PhD thesis, "Privacy-Invasive Software"
 2007 Lic. thesis, "Privacy-Invasive Software: Exploring Effects and Countermeasures"
 2003 MSc thesis, "Investigating Spyware in Peer-to-Peer Tools"

Research

My research focuses on data analysis in the domains such as telecom, information security and computational criminology, which are approached using various methods from the interdisciplinary field of data science. Most research is done in collaboration with Ericsson Research, Swedish Police, the Swedish National Forensic Centre and Telenor. The research within the telecom domain focuses anomaly detection and fault prediction in cellular base-stations. Together with Swedish law enforcement the research aims to investigate and improve data-driven methods for mitigation of serial volume crime.

Teaching

All in all, I have been involved in teaching at least 15 unique courses on both under-graduate and graduate levels, as well as two Doctoral student courses. Out of these courses I have been course responsible in at least 10 of them. For some of the courses the course material has been created from scratch, while in others I have been responsible for parts of the course material. As I have a background in computer security and since BTH provides two computer security programmes, many of the courses that I have been involved in have been in that field. However, since 2016 much more of my teaching time have been scheduled for supervision and examination of degree projects. Between 2016-2018 I was the examiner for Master's thesis projects in computer science at BTH. Apart from individual courses, I was the manager for a Bachelor programme in *IT*

Security between 2010 – 2012. As of beginning of 2019 I was assigned as manager for a 5-year programme in *AI and machine learning* that starts autumn 2019.

Supervision experience

I have supervised two doctoral students that have successfully defended their Ph.D. theses. The first doctoral student was Dr Anton Borg who started his doctoral studies in 2009. I was included as a supervisor from the time he received his Licentiate degree in 2012 (approximately half way) until he defended his Ph.D. thesis in 2014. The second doctoral student was Dr Fredrik Erlandsson that I supervised from his start in 2012 until he successfully defended his Ph.D. thesis in 2017. In addition, I have also supervised Khurram Shahzad from the time he received his Licentiate degree in 2013, but he has not yet defended his Ph.D. thesis. He currently has a full-time teaching position at Mittuniversitetet. In addition to doctoral students I have also supervised some 25 successfully defended Master's degree projects.

Commitments of trust

I was general chair for the IEEE European Intelligence and Security Informatics Conference (EISIC) in 2018 and I'm also a member in various program committees, e.g., International Conference on Machine Learning, Optimization, and Data Science (LOD). In 2018 I was guest-editor for a special issue on computational criminology in Springer's journal in Security Informatics. I'm also in the editorial board for EAI Endorsed Transactions on Security and Safety. As a senior researcher I'm continuously peer-reviewing work for conferences, e.g. International Conference on Machine Learning (ICML), Conference on Neural Information Processing Systems (NIPS) and Conference on Uncertainty in Artificial Intelligence (UAI). When it comes to journals, I continuously review manuscripts submitted to for instance Springer's Knowledge and Information Systems and Elsevier's Expert Systems with Applications.

Review commitments

I'm reviewing for various journals, such as Elsevier's Information sciences and Springer's Frontiers of Computer Science. I'm also a member of the scientific program committee for various conferences and workshops which involves peer-reviewing submitted papers, e.g. for NIPS, ICML, FSDM, ENIC, CSTIM and EISIC.

Project funding obtained

- 2015-2016 ~250' € from Vinnova FRÖN, "*Increasing efficiency in law enforcement using data science methods*", main applicant and project leader.
- 2014-2015 ~200' € from Regional Council of Blekinge, "*Open data and predictive models in law enforcement*", main applicant and project leader.
- 2012-2014 ~660' € from EU's Regional Development Fund, "*Computer-based support for improved knowledge of serial crime*", main applicant and project leader.
- 2012-2014 ~1,000' € from Vinnova - Sweden's innovation agency, "*Mobile services for energy efficiency in existing buildings*".
- 2008-2011 ~180' € from Swedish Internet Infrastructure Foundation, "*Secure e-mail amongst malicious software*", main applicant.

Publications

ID	JOURNAL ARTICLES (PEER-REVIEWED)
J1	Martin Boldt , Anton Borg, Selim Ickin, and Jörgen Gustafsson, "Anomaly detection of event sequences using multiple temporal resolutions and Markov chains", in Knowledge and Information Systems, ISI impact: 2.247, 2019
J2	Martin Boldt and Kaavya Rekanar, "On the analysis and binary classification of privacy policies from both rogue and top 100 Fortune global companies", in International Journal of Information Security and Privacy, ISI impact: 0.550, 2019

J3	Martin Boldt , "An evaluation of the efficiency and quality of structured crime reports", in Nordic Journal of Policing Studies, 2018
J4	Martin Boldt , Anton Borg, Martin Svensson, Jonas Hildeby, "Predicting burglars' risk exposure and level of pre-crime preparation using crime scene data", in Journal of Intelligent Data Analysis, ISI impact: 0.631, 2018
J5	Martin Boldt , Andreas Jacobsson, Dejan Baca and Bengt Carlsson, "Introducing a novel security-enhanced agile software development process", in International Journal of Secure Software Engineering, 2017
J6	Fredrik Erlandsson, Piotr Bródka, Martin Boldt and Henric Johnson, "Do we really need to catch them all? User-guided social media crawling method", in Entropy, ISI impact: 1.821, 2017
J7	Martin Boldt and Anton Borg, "Evaluating temporal analysis methods using residential burglary data", in International Journal of Geo-Information – Special Issue "Frontiers in Spatial and Spatiotemporal Crime Analytics", ISI impact factor: 1.502, 2016
J8	Anton Borg and Martin Boldt , "Clustering residential burglaries using modus operandi and spatiotemporal information", in International Journal of Information Technology & Decision Making, World Scientific, ISI impact: 1.406, 2016
J9	Andreas Jacobsson, Martin Boldt and Bengt Carlsson, "A risk analysis of a smart home automation systems", in Journal of Future Generation Computer Systems, ISI impact: 2.786, 2015
J10	Anton Borg, Martin Boldt , Niklas Lavesson, Ulf Melander, Vaseka Boeva, "Detecting serial residential burglaries using clustering", in Journal of Expert Systems with Applications, ISI impact: 2.339, 2014
J11	Niklas Lavesson, Martin Boldt , Paul Davidsson and Andreas Jacobsson, "Learning to detect spyware using end user license agreements", in International Journal of Knowledge and Information Systems, ISI impact: 2.225, 2009
J12	Jens Olsson and Martin Boldt , "Computer forensic timeline visualization tool", in Journal of Digital Investigation, ISI impact factor: 0.768, 2009

ID CONFERENCE PAPERS (PEER-REVIEWED)

C1	Anton Borg, Martin Boldt and Johan Svensson, "Using conformal prediction for multi-label document classification in e-mail support systems", in proceedings of the 32nd International Conference on Industrial, Engineering & Other Applications of Applied Intelligent Systems, 2019
C2	Martin Boldt and Anton Borg, "A statistical method for detecting significant temporal hotspots using LISA statistics", in proceedings of the 8th European Intelligence and Security Informatics Conference, 2017
C3	Anton Borg, Martin Boldt and Johan Eliasson, "Detecting crime series based on route estimations and behavioral similarity", in proceedings of the 8th European Intelligence and Security Informatics Conference, 2017
C4	Martin Boldt and Jaswanth Bala, "Filtering estimated crime series based on route calculations on spatiotemporal data", in proceedings of the 7th European Intelligence and Security Informatics Conference, 2016
C5	Dejan Baca, Martin Boldt , Bengt Carlsson and Andreas Jacobsson, "A novel security-enhanced agile software development process applied in an industrial setting", in proceedings of the 10th International Conference on Availability, Reliability and Security, Lecture Notes in Computer Science, 2015
C6	Fredrik Erlandsson, Roozbeh Nia, Martin Boldt , Henric Johnson and Felix Wu, "Crawling online social networks", in proceedings of the Second European Network Intelligence Conference, 2015
C7	Raja Khurram Shahzad, Mehwish Fatima, Niklas Lavesson, Martin Boldt , "Consensus decision making in random forests", in Machine Learning, Optimization, and Big Data, Lecture Notes in Computer Science 9432, 2015
C8	Martin Boldt and Anton Borg, "En strukturerad metod för registrering och automatisk analys av brott", in proceedings of the 5th Biennial Nordic Police Research Seminar, 2014
C9	Martin Boldt , Andreas Jacobsson, Bengt Carlsson, "On the risk exposure of smart home automation systems", in proceedings of the 2nd IEEE International Conference on Future Internet of Things and Cloud, 2014
C10	Fredrik Erlandsson, Martin Boldt and Henric Johnson, "Privacy threats related to user profiling in online social networks", in proceedings of 4th IEEE International Conference on Information Privacy, Security, Risk and Trust, 2012
C11	Anton Borg, Martin Boldt and Bengt Carlsson, "Simulating malicious users in a software reputation system", Communications in Computer and Information Science, Vol. 186, 2011.
C12	Anton Borg, Martin Boldt and Niklas Lavesson, "Informed software installation through license agreement categorization", in Proceedings of Information Security South Africa, 2011
C13	Martin Boldt , Anton Borg and Bengt Carlsson, "On the simulation of a software reputation system", in Proceedings of the International Conference on Availability, Reliability and Security, 2010.
C14	Niklas Lavesson, Paul Davidsson, Martin Boldt and Andreas Jacobsson, "Spyware prevention by classifying end user license agreements", in Studies in Computational Intelligence, Volume 134, 2008
C15	Martin Boldt , Paul Davidsson, Andreas Jacobsson and Niklas Lavesson, "Automated spyware detection using end user license agreements", in proceedings of the Second International Conference on Information Security and Assurance, 2008
C16	Martin Boldt and Bengt Carlsson, "Confidentiality aspects within road user charging systems: the Swedish case", in proceedings of the 15th ITS World Congress, 2008
C17	Bengt Carlsson and Martin Boldt , "Security analysis of the Swedish road user charging system", in Proceedings of the 15th ITS World Congress, 2008
C18	Martin Boldt , Bengt Carlsson, Tobias Larsson, Niklas Lindén, "Preventing privacy-invasive software using online reputations", in Lecture Notes in Computer Science, Volume 4721, 2007
C19	Jan Persson, Paul Davidsson, Martin Boldt , Bengt Carlsson, Marcus Fiedler, "Evaluation of road user charging systems: the Swedish case", in proceedings of the 14th World Congress on Intelligent Transport Systems, 2007
C20	Martin Boldt , Bengt Carlsson, Roy Martinsson, "Software vulnerability assessment – version extraction and verification", in

	proceedings of the International Conference on Systems and Networks Communications, 2007
C21	<u>Martin Boldt</u> and Bengt Carlsson, "Privacy-invasive software and preventive mechanisms", in proceedings of the International Conference on Systems and Networks Communications, 2006
C22	<u>Martin Boldt</u> and Bengt Carlsson, "Analysing countermeasures against privacy-invasive software", in Proceedings of the International Conference on Systems and Networks Communications, 2006
C23	Andreas Jacobsson, <u>Martin Boldt</u> and Bengt Carlsson, "Privacy-invasive software in file-sharing tools", in Proceedings of the IFIP World Computer Congress, 2004

ID	WORKSHOP PAPERS (PEER-REVIEWED)
W1	<u>Martin Boldt</u> , Anton Borg and Veselka Boeva, "Multi-expert estimations of burglars' risk exposure and level of pre-crime preparation using on crime scene data", in proceedings of the 30th Annual Workshop of the Swedish Artificial Intelligence Society (SAIS), 2017
W2	<u>Martin Boldt</u> , Bengt Carlsson and Andreas Jacobsson, "Exploring spyware effects", in Proceedings of the Nordic Workshop on Secure IT Systems, 2004
W3	Johan Wieslander, <u>Martin Boldt</u> and Bengt Carlsson, "Investigating spyware on the internet", in Proceedings of the Nordic Workshop on Secure IT Systems, 2003