

Curriculum Vitae of Thomas Schön

September 2013

Work Address

Division of Automatic Control
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Home Address

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Born:
 December 25, 1977 in Jönköping, Sweden.
Citizenship:
 Swedish

Academic degrees

Doctor of Philosophy (PhD) in Automatic Control, Linköping University, Linköping, Sweden, February 2006.

Licentiate of Engineering in Automatic Control, Linköping University, Linköping, Sweden, October 2003.

Master of Science in Applied Physics and Electrical Engineering, Linköping University, Linköping, Sweden, September 2001.

Bachelor of Science in Business Administration, Linköping University, Linköping, Sweden, January 2001.

Academic positions

Professor or the Chair of Automatic Control with the Division of Systems and Control, Department of Information Technology, Uppsala University, since September 2013.

Docent in Automatic Control, Division of Automatic Control, Department of Electrical Engineering, Linköping University, since 2009.

Associate Professor with the Division of Automatic Control, Department of Electrical Engineering, Linköping University, September 2008-.

Assistant Professor with the Division of Automatic Control, Department of Electrical Engineering, Linköping University, March 2006-September 2008.

PhD student with the Division of Automatic Control, Department of Electrical Engineering, Linköping University, December 2001-February 2006.

Teaching assistant (Swedish: Amanuens) at the Division of Automatic Control, Linköping University, Linköping, Sweden, August 2000-July 2001.

Longer scientific visits

Visiting scholar with the School of Electrical Engineering and Computer Science, **The University of Newcastle**, Newcastle, Australia, October 2012, October 2011, September 2010, February-March 2009, April 2006 and February-May 2005.

Visiting scholar with **Abisko Scientific Research Station**, Swedish Polar Research Secretariat, Abisko, Sweden, February 2012.

Junior guest researcher with the Control Group at the **University of Cambridge**, Cambridge, United Kingdom, April-September 2001.

Research awards

Awarded the **best PhD thesis award** 2013 by The European Association for Signal Processing (EURASIP). The award is based on the impact of the thesis.

Senior Member of the Institute of Electrical and Electronics Engineers (IEEE), since 2011.

Honorable mention (nominated for the best student paper award) at the International Conference on Information Fusion, Chicago, IL, USA, 2011 with the paper *Bicycle tracking using ellipse extraction*.

Nominated for best industry-relevant paper award at the Swedish Symposium on Image Analysis (SSBA), 2010 with the paper *Torch guided navigation*.

Best student paper award at the IEEE International Conference on Ultra-Wideband, Vancouver, Canada, 2009 with the paper, *Tightly coupled UWB/IMU pose estimation*.

Nominated for best industry-relevant paper award at the Swedish Symposium on Image Analysis (SSBA), 2009 with the paper *Indoor photo realistic 3D mapping using stereo images from SLR cameras*.

Travel grant to participate at the London International Youth Science Forum, London, UK. Awarded for successful project presented at annual exhibit of The Swedish Federation of Young Scientists, Stockholm, Sweden, (this award was received both in 1995 and in 1996).

Teaching awards

Awarded **best teacher** at the Institute of Technology, Linköping University (“**Gyllene moroten**”), 2009.

Nominated for the **best teacher award** at Institute of Technology, Linköping University (“**Gyllene moroten**”), 2007.

Eight times selected as **outstanding lecturer** by the dean of the Institute of Technology at Linköping University. The awards were given based on the performance in the courses Automatic Control (2006 – 2011) and Digital Signal Processing (2009 – 2011).

Teaching experience

Lecturer in the course, Computational inference in dynamical systems (PhD course, 3 occasions), The University of Sydney, Sydney, Australia, KTH Royal Institute of Technology, Stockholm, Sweden and Vrije Universiteit Brussel, Brussels, Belgium, 2012.

Lecturer and examiner in the course, Machine Learning (PhD course, 3 occasions, 2 at Linköping University and 1 at Lund University, respectively), 2011, 2013.

Lecturer in the course, Least Squares Estimation and SLAM (PhD course, 1 occasion), Sapienza University of Rome, Rome, Italy, 2011.

Lecturer and examiner in the course, Digital Signal Processing (4-5th year, 4 occasions), 2009-2012.

Lecturer and examiner in the course, Automatic Control (3rd year, 7 occasions), 2006-2013.

Lecturer and examiner in the course, Dynamic Vision (PhD course, 1 occasion), 2009.

Lecturer and examiner in the course, Linear Feedback Systems (3rd year, 1 occasion), 2009.

Teaching assistant in the following courses; Digital Signal Processing (4th year, 2 occasions), Automatic Control (3rd year, 9 occasions), Digital Control (3rd year, 3 occasions), Automatic Control - Project Course (4th year, 3 occasions), Matlab Introductory Course, 2000-2005.

Teaching assistant (Swedish: Amanuens) at the Division of Automatic Control, Linköping University, Linköping, Sweden, 2000-2001.

Lab assistant in more than 10 different labs in automatic control and signal processing, 2001-2006.

Supplemental instructor in mathematics. Department of Mathematics, Linköping University, Sweden. August 1997-January 1998.

Developed and improved labs and other course material for several courses at the Division of Automatic Control, Linköping University, Linköping, Sweden, 2000-present.

Pedagogical education

Teaching in Higher Education, Step 3a. Research Supervision (4hp), 2009.

Teaching in Higher Education, Step 2. Designing, Evaluating and Organizing Learning (6hp), 2009.

Teaching in Higher Education, Step 1. Learning, Instructing and Knowledge (4hp), 2005.

Membership committees and societies

Founding member of the IEEE CSS Technical Committee on System Identification and Adaptive Control, 2006-present.

Deputy member of the board for the Master of Science in Industrial Engineering and Management program at Linköping University, Linköping, Sweden and **responsible** for Technical profile – Electrical Engineering, 2008-present.

Member of the program planning committee (PPG) for the Master of Science in Industrial Engineering and Management program at Linköping University, Linköping, Sweden, 2008-present.

Head of finances in the Electrical Engineering Program welcoming committee, Linköping, Sweden, 1999-2000.

Chairman of the industry committee and member of the board for the Electrical Engineering student community, Linköping, Sweden, 1998-1999.

Member of the NOVA 100 network (Nova pro). See www.novaagentum.se for more information, 1999-present.

Entrepreneurial achievements

Owner and founder of Schön Industrial Mathematics, providing technical consulting within the areas of signal processing, machine learning and sensor fusion, 2006-present.

Other professional activities

Invited lecturer and plenary speaker

International Conference on Machine Learning (ICML), Workshop on Machine Learning for System Identification, Atlanta, GA, USA, 2013.

SIGRAD 2013 (**keynote lecture**), Norrköping, Sweden, 2013.

Sennheiser Research & Innovation, San Francisco, CA, USA, 2013.

The University of British Columbia, IEEE Vancouver section, Vancouver, Canada, 2013.

University of Cambridge, Department of Engineering, Cambridge, UK, 2013.

University of California Santa Barbara, Center for Control, Dynamical Systems, and Computation, Santa Barbara, CA, USA, 2013.

University of California Berkeley, Department of Electrical Engineering and Computer Sciences, Berkeley, CA, USA, 2013.

Linköping University, Division of Statistics, Linköping, Sweden 2013.

University of California Berkeley, Department of Electrical Engineering and Computer Sciences, Berkeley, CA, USA, 2012.

Royal Institute of Technology, Automatic Control Laboratory, Stockholm, Sweden, 2012.

University of Sydney, Australian Center for Field Robotics (ACFR), Sydney, Australia, 2012.

University of New South Wales, School of Electrical Engineering and Telecommunications, Sydney, Australia, 2012.

University of Newcastle, The School of Electrical Engineering and Computer Science, Newcastle, Australia, 2012.

Workshop on Recent Advances in Sequential Monte Carlo, The University of Warwick, Coventry, United Kingdom, 2012.

Vrije Universiteit Brussel, Department of Fundamental Electricity and Instrumentation, Brussels, Belgium, 2012.

Workshop on Complex modeling, Convergence, and Uncertainty Quantification, Uppsala University, Uppsala, Sweden, 2012.

Linköping University, Department of Mathematics, Linköping, Sweden, 2012.

Symposium on Robotic Skill Learning and Cognition, Lund University, Lund, Sweden, 2012.

Uppsala University, Division of Systems and Control, Uppsala, Sweden, 2011.

Lund University, Department of Automatic Control, Lund, Sweden, 2011.

Sapienza University of Rome, The Department of Computer and System Sciences, Rome, Italy, 2011.

University of Newcastle, The School of Electrical Engineering and Computer Science, Newcastle, Australia, 2010.

Swedish Defence Research Agency, Linköping, Sweden, 2010.

Chalmers University of Technology, Department of Signals and Systems, Göteborg, Sweden, 2010.

Royal Institute of Technology, Centre for Autonomous Systems, Stockholm, Sweden, 2009.

Fudan University, Department of Electronics Engineering, Shanghai, China, 2009.

University of Newcastle, The School of Electrical Engineering and Computer Science, Newcastle, Australia, 2009.

University of Sydney, Australian Center for Field Robotics (ACFR), Sydney, Australia, 2009.

Saab Aerosystems, Linköping, Sweden, 2009.

International Symposium of 3D Analysis of Human Movement, **H. J. Woltring lecture (plenary lecture)**, Amsterdam, The Netherlands, 2008.

Xsens Technologies, Enschede, The Netherlands, 2008.

Swiss Federal Institute of Technology (ETH), Automatic Control Laboratory, Zürich, Switzerland, 2008.

Autoliv Electronics, Linköping, Sweden, 2008.

Volvo Technology, Göteborg, Sweden, 2007.

Royal Institute of Technology, Department of Mathematics, Stockholm, Sweden, 2007.

Fraunhofer Chalmers Research Centre, Systems Biology & Bioinformatics Group, Göteborg, Sweden, 2006.

Chalmers University of Technology, Department of Signals and Systems, Göteborg, Sweden, 2006.

Lund University, Department of Automatic Control, Lund, Sweden, 2006.

University of Cambridge, Department of Engineering, Cambridge, United Kingdom, 2006.

University of Newcastle, The School of Electrical Engineering and Computer Science, Newcastle, Australia, 2005.

The Institute of Statistical Mathematics, Tokyo, Japan, 2005.

DaimlerChrysler, Research and Technology, Powertrain Control, Stuttgart, Germany, 2004.

Organization of scientific events

Co-chair, OPTEC Workshop on Moving Horizon Estimation and System Identification held in Leuven, Belgium, August 29-30, 2012.

Co-organizer of two invited sessions; “Sequential Monte Carlo Methods 1” and “Sequential Monte Carlo Methods 2” at the 16th IFAC Symposium on System Identification (SYSID) held in Brussels, Belgium, July, 2012.

Co-organizer of the Linköping-Freiburg workshop on “Learning World Models” held in Linköping, June 21-22, 2010.

Co-organizer of the invited session “Particle Filter Approaches to Estimation and System Identification” at the 15th IFAC Symposium on System Identification (SYSID) held in Saint-Malo, France, July, 2009.

Program committees of international conferences

- Member of the Technical Program Committee (TPC) of the Eighth International Conference on Intelligent Sensors, Sensor Networks and Information Processing (ISSNIP) held in Melbourne, Australia, April 2013.
- Member of the International Program Committee (IPC) of the 16th IFAC Symposium on System Identification (SYSID) held in Brussels, Belgium, July 2012.
- Member of the Technical Program Committee (TPC) of the Seventh International Conference on Intelligent Sensors, Sensor Networks and Information Processing (ISSNIP) held in Adelaide, Australia, December 2011.
- Member of the International Program Committee (IPC) at the 5th European Conference on Mobile Robots (ECMR) held in Örebro, Sweden, September 2011.
- Member of the Program Committee (PC) of the Robotics: Science and Systems (RSS) conference held in Los Angeles, CA, USA, June 2011.

Opponent and grading committee duties

- External examiner, PhD thesis, Joseph Hall, "Machine learning for control: incorporating prior knowledge", University of Cambridge, April 2013, Cambridge, UK.
- Faculty opponent, Licentiate thesis, Olov Rosén, "Parallelization of estimation algorithms on multi-core architectures", Uppsala University, April 2013, Uppsala, Sweden.
- Grading committee, PhD thesis, Toivo Henningsson, "Stochastic event-based control and estimation", Lund University, December 2012, Lund, Sweden.
- Pre-examiner, PhD thesis, Jouni Hartikainen, "Sequential inference for latent temporal Gaussian process models", Aalto University, October 2012, Aalto, Finland.
- Grading committee, PhD thesis, Carl Svärd, "Methods for fault detection and isolation with automotive applications", Linköping University, June 2012, Linköping, Sweden.
- Grading committee, PhD thesis, Anne Van Mulders, "Tackling two drawbacks of polynomial nonlinear state-space models", Vrije Universiteit Brussel, May 2012, Brussels, Belgium.
- Grading committee, PhD thesis, Lars Hammarstrand (f.d. Danielsson), "Tracking and radar sensor modelling for automotive systems", Chalmers University of Technology, April 2010, Göteborg, Sweden.
- Faculty opponent, Licentiate thesis, Mohammad Ali, "On automotive roadway departure prevention", Chalmers University of Technology, May 2010, Göteborg, Sweden.

Reviewing: journal papers and grant applications

Reviewer for several international journals, including IEEE Transactions on Signal Processing, Automatica, IEEE Transactions on Automatic Control, IEEE Transactions on Intelligent Transportation Systems, IEEE Signal Processing Letters, International Journal of Robotics Research, Control Engineering Practice, Statistics and Probability Letters, Aerospace Science and Technology, International Journal of Adaptive Control and Signal Processing, Israel Science Foundation and Research Grants Council (RGC) of Hong Kong.

Reviewing: conference papers

Reviewer for several international conferences, including IEEE Conference on Decision and Control (CDC), IFAC World Congress, IFAC Symposium on System Identification (SYSID), Robotics: Science and Systems (RSS), IEEE Intelligent Vehicles Symposium (IV), American Control Conference (ACC), European Control Conference (ECC), IEEE/RJS International Conference on Intelligent Robots and Systems (IROS), IEEE International Conference on Robotics and Automation (ICRA).

Research funding

The list below contains research funding at Linköping university. So far Schön has no external funding at Uppsala University.

The Swedish Foundation for Strategic Research (SSF), Collaborative Unmanned Aircraft Systems (CUAS), 2011-2016. Co-applicant. Amount: SEK 15 000 000.

Swedish Research Council (VR), Calibrating Nonlinear Dynamical Models (CNDM), 2011-2013. Main applicant. Amount: SEK 1 900 000.

Swedish Research Council (VR), Extended Target Tracking (ETT), 2011-2014. Co-applicant. Amount: SEK 9 600 000.

Swedish Research Council (VR), Control, Autonomy and Decision-making In Complex Systems (CADICS), A Linnaeus Center, 2008-2018. Co-applicant. Amount: SEK 75 000 000 (55 000 000 + 20 000 000).

Linköping University, Individual Career grant from the Rector, 2010-2015. Amount: SEK 5 500 000.

Previous project involvement

MOVIII – Modelling, Visualization and Information Integration, a Strategic Research Center, funded by **The Swedish Foundation for Strategic Research (SSF)**, 2006-2010.

SEFS – SENSor Fusion for Safety systems, a Swedish **IVSS** project. Industrial research project with partners both from academia (Chalmers University of Technology and Linköping University) and the automotive industry (Volvo Car Corporation, Volvo Technology, Volvo 3P, Mecel and Delphi), 2005-2009.

MATRIS – Markerless real-time Tracking for Augmented Reality Image Synthesis, a **European** research project (sixth framework) with partners both from academia (Christian-Albrechts-University Kiel, Germany and Linköping University) and industry (BBC R&D, London, UK, Fraunhofer Institute for Computer Graphics, Darmstadt, Germany, Xsens Technologies, Enschede, The Netherlands), 2004-2007.

Additional responsibilities

Responsible for the undergraduate laboratory, Division of Automatic Control, Linköping University, 2008-2013.

Languages

Swedish (mother tongue)

English (fluent)

German (intermediate knowledge)

Students

Current PhD students (main supervisor)

[PhD6] Fredrik Lindsten (Linköping), Rao-Blackwellised particle methods for inference and identification. Eng. Lic. June 2011. PhD thesis will be defended on October 25, 2013.

[PhD7] Tohid Ardeshtari (Linköping), Target tracking using learned classifiers and particle filters.

[PhD8] Manon Kok (Linköping), Using magnetometers for positioning and map building.

[PhD9] Johan Dahlin (Linköping), Nonlinear system identification using sequential Monte Carlo methods.

[PhD10] Christian Andersson Naesseth (Linköping), Sequential Monte Carlo for general models.

[PhD11] Johan Wågberg (Uppsala), Bayesian Nonparametric models for system identification.

[PhD12] Andreas Svensson (Uppsala) Thesis topic: Sequential Monte Carlo and Gaussian processes for change detection.

Current PhD students (co-supervisor)

- [PhD13] Zoran Sjanic (Linköping), Navigation and SAR auto-focusing in a sensor fusion framework, Eng. Lic. 2011.
- [PhD14] Martin Skoglund (Linköping), Visual inertial navigation and calibration, Eng. Lic. 2011.
- [PhD15] Niklas Wahlström (Linköping), Localization using magnetometers and light sensors. Eng. Lic. 2013.

Graduated PhD students

- [PhD5] Karl Granström (Automatic Control, 2012), Extended target tracking using PHD filters. Main supervisor: Dr Thomas Schön. Co-Supervisor: Professor Fredrik Gustafsson.
- [PhD4] Christian Lundquist (Automatic Control, 2011), Sensor fusion for automotive applications. Main supervisor: Professor Fredrik Gustafsson. Co-Supervisor: Dr Thomas Schön.
- [PhD3] Jeroen Hol (Automatic Control, 2011), Sensor fusion and calibration of inertial sensors, vision, ultra-wideband and GPS. Main supervisor: Dr Thomas Schön. Co-Supervisor: Professor Fredrik Gustafsson.
- [PhD2] David Broman (Computer Science, 2010), Meta-languages and semantics for equation-based modeling and simulation. Main supervisor: Professor Peter Fritzson. Co-Supervisor: Dr Thomas Schön.
- [PhD1] David Törnqvist (Automatic Control, 2008), Estimation and detection with applications to navigation. Main supervisor: Professor Fredrik Gustafsson. Co-Supervisor: Dr Thomas Schön.

Graduated licentiate students

- [Lic7] Niklas Wahlström (2013), Localization using magnetometers and light sensors. Main supervisor: Professor Fredrik Gustafsson. Co-supervisor: Dr Thomas Schön.
- [Lic6] Martin Skoglund (2011), Visual inertial navigation and calibration. Main supervisor: Professor Fredrik Gustafsson. Co-supervisor: Dr Thomas Schön.
- [Lic5] Fredrik Lindsten (2011), Rao-Blackwellised particle methods for inference and identification. Main supervisor: Dr Thomas Schön. Co-supervisor: Professor Lennart Ljung and Professor Fredrik Gustafsson.
- [Lic4] Karl Granström (2011), Loop detection and extended target tracking using laser data. Main supervisor: Dr Thomas Schön. Co-supervisor: Professor Fredrik Gustafsson.
- [Lic3] Zoran Sjanic (2011), Navigation and SAR auto-focusing in a sensor fusion framework. Main supervisor: Professor Fredrik Gustafsson. Co-supervisor: Dr Thomas Schön.
- [Lic2] Christian Lundquist (2009), Automotive sensor fusion for situation awareness. Main supervisor: Professor Fredrik Gustafsson. Co-supervisor: Dr Thomas Schön.
- [Lic1] Jeroen Hol (2008), Pose estimation and calibration algorithms for vision and inertial sensors. Main supervisor: Professor Fredrik Gustafsson. Co-supervisor: Dr Thomas Schön.

MSc/BSc and internship students

- [MSc49] Jagbrant, Gustav (2013) Autonomous Crop Segmentation, Characterisation and Localisation. Master's thesis, Department of Electrical Engineering, Linköping University, Sweden. With Australian Center for Field Robotics, University of Sydney, Sydney, Australia.
- [MSc48] Daniel Hultqvist (2013) Detection and tracking of overtaking vehicle. Master's thesis, Department of Electrical Engineering, Linköping University, Sweden. With Autoliv Electronics, Linköping, Sweden.
- [MSc47] Christian Andersson Naesseth (2013) Vision and Radar Sensor Fusion for Advanced Driver Assistance Systems, Department of Electrical Engineering, Linköping University, Sweden. With Autoliv Electronics, Linköping, Sweden.
- [MSc46] Hanna Nyqvist (2012) Image databases for pose hypothesis generation. Master's thesis, Department of Electrical Engineering, Linköping University, Sweden. With Australian Center for Field Robotics, University of Sydney, Sydney, Australia.

- [MSc45] David Gillsjö (2012) Moving object detection in urban environments. Master's thesis, Department of Electrical Engineering, Linköping University, Sweden. With Australian Center for Field Robotics, University of Sydney, Sydney, Australia. **This work was also published at the IEEE International Conference on Robotics and Automation (ICRA), Karlsruhe, May, 2013.**
- [MSc44] Emanuel Walldén Viklund and Johan Wågberg (2012) Continuous occupancy mapping using Gaussian processes. Master's thesis, Department of Electrical Engineering, Linköping University, Sweden. With Australian Center for Field Robotics, University of Sydney, Sydney, Australia.
- [MSc43] Sebastian Jansson (2012) On vergence calibration of a stereo camera. Master's thesis, Department of Electrical Engineering, Linköping University, Sweden. With Autoliv Electronics, Linköping, Sweden.
- [BSc1] Andersson Naesseth, Christian (2012) Nowcasting using microblog data. Bachelor's thesis, Department of Electrical Engineering, Linköping University, Sweden. With the Division of Automatic Control, Linköping University, Linköping, Sweden.
- [MSc42] Jonatan Olofsson (2012) Towards autonomous landing of a quadrotor using monocular SLAM techniques. Master's thesis, Department of Computer and Information Science, Linköping University, Sweden. With Department of Computer and Information Science, Linköping University, Sweden.
- [MSc41] Tobias Andersson and Mattis Lorentzon (2012) Road Surface Modeling using Stereo Vision. Master's thesis, Department of Electrical Engineering, Linköping University, Sweden. With Autoliv Electronics, Linköping, Sweden.
- [MSc40] Johan Kihlberg and Simon Tegelid (2012) Map aided indoor positioning. Master's thesis, Department of Electrical Engineering, Linköping University, Sweden. With Xdin, Linköping, Sweden. **Awarded best Master's thesis 2012 by Dataföreningen - öst**
- [MSc39] Daniel Barac (2011) Localization algorithms for indoor UAVs. Master's thesis, Department of Electrical Engineering, Linköping University, Sweden. With the Department of Computer and Information Science, Linköping University, Linköping, Sweden.
- [MSc38] Niklas Carlsson (2011) Spatial Information Estimation in LTE Networks. Master's thesis, Department of Electrical Engineering, Linköping University, Sweden. With Ericsson R&D, Linköping, Sweden.
- [MSc37] Pontus Jernberg and Dan Gunning (2011) Estimation of Inter-cell Interference in 3G Communication Systems. Master's thesis, Department of Electrical Engineering, Linköping University, Sweden. With ARC Centre of Excellence for Complex Dynamic Systems and Control, University of Newcastle, Newcastle, Australia.
- [MSc36] Johannes Fri (2011) Path Prediction for a Night Vision System. Master's thesis, Department of Electrical Engineering, Linköping University, Sweden. With Autoliv Electronics, Linköping, Sweden.
- [MSc35] Johan Norberg (2010) Large Scale Terrain Modelling for Autonomous Mining. Master's thesis, Department of Electrical Engineering, Linköping University, Sweden. With Australian Center for Field Robotics, Sydney, Australia. **This work was also published at the Australasian Conference on Robotics & Automation 2010. Awarded best Master's thesis 2010 by The Swedish Radio Navigation Board (Radionavigeringsnämnden)**
- [MSc34] Jon Bjerkefur and Anders Karlsson (2010) Simultaneous Localization and Mapping of Indoor Environments Using a Stereo Camera and a Laser Camera. Master's thesis, Department of Electrical Engineering, Linköping University, Sweden. With the Swedish Defence Research Agency (FOI), Linköping, Sweden.
- [MSc33] Erik Almqvist (2010) Airborne Mapping Using LIDAR. Master's thesis, Department of Electrical Engineering, Linköping University, Sweden. With CybAero, Linköping, Sweden.
- [MSc32] Tobias Andersson (2010) Increased Autonomy for Construction Equipment using Vision. Master's thesis, Department of Electrical Engineering, Linköping University, Sweden. With Volvo Construction Equipment, Eskilstuna, Sweden.

- [MSc31] Olof Larsson (2010) Improved model-based visual-inertial tracking using 2D image information. Master's thesis, Department of Electrical Engineering, Linköping University, Sweden. With Deutsches Forschungszentrum für Künstliche Intelligenz, Kaiserslautern, Germany.
- [MSc30] Emil Nilsson (2010) An optimization based approach to visual odometry using infrared images. Master's thesis, Department of Electrical Engineering, Linköping University, Sweden. With Autoliv Electronics, Linköping, Sweden. **This work was also published at the 18th World Congress of the International Federation of Automatic Control (IFAC), Milan, Italy, August-September 2011 and at the Swedish Symposium on Image Analysis (SSBA), Linköping, Sweden, 2011.**
- [MSc29] Joel Hermansson (2010) Vision and GPS Based Autonomous Landing of an Unmanned Aerial Vehicle. Master's thesis, Department of Electrical Engineering, Linköping University, Sweden. With CybAero, Linköping, Sweden. **This work was also published at the Swedish Control Conference (Reglermöte) in Lund, Sweden, June 2010.**
- [MSc28] Martin Larsson (2010) Road slope estimation. Master's thesis, Department of Electrical Engineering, Linköping University, Sweden. With Scania, Södertälje, Sweden.
- [MSc27] Viktor Kolbe (2009) Indoor Photorealistic 3D Mapping Using Stereo Vision. Master's thesis, Department of Electrical Engineering, Linköping University, Sweden. With Saab Dynamics, Linköping, Sweden. **This work was also published at the Swedish Symposium on Image Analysis (SSBA), 2009, where it was nominated for the best industry-relevant paper award.**
- [MSc26] Robert Henriksson (2009) Observers for estimation of the tool position for an industrial robot Design, simulation and experimental verification. Master's thesis, Department of Electrical Engineering, Linköping University, Sweden. With ABB Robotics, Västerås, Sweden. **This work was also published at the IEEE Conference on Decision and Control (CDC) in Shanghai, China, December 2009.**
- [MSc25] Anna Forsberg and Christer Östman (2009) Support System for Landing with an Autonomous Unmanned Aerial Vehicle. Master's thesis, Department of Electrical Engineering, Linköping University, Sweden. With Saab Aerosystems, Linköping, Sweden.
- [MSc24] Henrik Salomonsson and Björn Saläng (2008) Vision based pose estimation for landing of autonomous helicopter. Master's thesis, Department of Electrical Engineering, Linköping University, Sweden. With CybAero, Linköping, Sweden.
- [MSc23] Martin Törnquist (2008) Investigation of rotational velocity sensors. Master's thesis, Department of Electrical Engineering, Linköping University, Sweden. With Volvo Construction Equipment, Eskilstuna, Sweden.
- [MSc22] Peter Rosander (2008) Sensor fusion for camera based terrain navigation. Ongoing. Master's thesis, Department of Electrical Engineering, Linköping University, Sweden. With Saab, Linköping, Sweden.
- [MSc21] Erika Jönsson (2008) A Simulation Model for Detection and Tracking Bio Aerosol Clouds using Elastic Lidar. Master's thesis, Department of Electrical Engineering, Linköping University, Sweden. With the Swedish Defence Research Agency (FOI), Linköping, Sweden.
- [MSc20] Martin Skoglund (2008) Evaluating SLAM algorithms for Autonomous Helicopters. Master's thesis, Department of Electrical Engineering, Linköping University, Sweden, 2008. With Saab Aerosystems, Linköping, Sweden.
- [MSc19] Christian Blåberg (2008) Chest Observer for Crash Safety Enhancement. Master's thesis, Department of Electrical Engineering, Linköping University, Sweden. With Autoliv, Vårgårda, Sweden.
- [MSc18] Erik Agardt and Martin Löfgren (2008) Pilot study of systems to drive autonomous vehicles on test tracks. Master's thesis, Department of Electrical Engineering, Linköping University, Sweden. With Volvo Truck Corporation, Göteborg, Sweden.
- [MSc17] Henrik Johansson (2008) Dynamic models for ground target tracking using the particle filter. Master's thesis, Department of Electrical Engineering, Linköping University, Sweden. With Saab, Stockholm, Sweden.

- [MSc16] Jonas Callmer and Karl Granström (2008) Large Scale SLAM in an Urban Environment. Master's thesis, Department of Electrical Engineering, Linköping University, Sweden. With Australian Center for Field Robotics, Sydney, Australia. **This work was also published at the IEEE International Conference on Robotics and Automation (ICRA) in Kobe, Japan, May 2009.**
- [MSc15] AnnaLindfelt and Anders Nordlund (2008) A path following method with obstacle avoidance for UGVs. Master's thesis, Department of Electrical Engineering, Linköping University, Sweden. With Swedish Defence Research Agency (FOI), Linköping, Sweden.
- [MSc14] Simon Danielsson (2007) Monte Carlo based threat assessment: an in depth analysis. Master's thesis, Department of Electrical Engineering, Linköping University, Sweden. With National IST Australia, Canberra, Australia.
- [MSc13] Johan Kjellson (2007) Study of a mobile integrated navigation system. Master's thesis, Department of Electrical Engineering, Linköping University, Sweden. With SAAB Bofors Dynamics, Linköping, Sweden.
- [MSc12] Martin Nilsson (2007) Estimation of radial runout. Master's thesis, Department of Electrical Engineering, Linköping University, Sweden. With Scania, Södertälje, Sweden.
- [MSc11] Jacob Ruhe and Johan Nordin (2007) Classification of points acquired by airborne laser systems. Master's thesis, Department of Electrical Engineering, Linköping University, Sweden. With Swedish Defence Research Agency (FOI), Linköping, Sweden. **The work led to the start of the company Foran remote sensing AB.**
- [MSc10] Peter Rytterstedt (2007) Observer for a vehicle longitudinal controller. Master's thesis, Department of Electrical Engineering, Linköping University, Sweden. With DaimlerChrysler, Stuttgart, Germany.
- [MSc9] Shahin Rouhani (2005) Radar and thermopile sensor fusion for pedestrian detection. Master's thesis, Department of Electrical Engineering, Linköping University, Sweden. With DaimlerChrysler, Ulm, Germany.
- [MSc8] Jeroen Hol (2005) Sensor fusion using inertial and vision sensors. Master's thesis, Faculty of Engineering Technology, University of Twente, The Netherlands. With Xsens, Enschede, The Netherlands. **Awarded best Master's thesis at the faculty of Engineering Technology at the University of Twente.**
- [MSc7] Samuel Malinen (2005) Active front steering change detection. Master's thesis, Department of Electrical Engineering, Linköping University, Sweden. With ZF Lenksysteme, Schwäbisch Gmünd, Germany.
- [MSc6] Erik Narby (2005) Friction estimation in automotive applications. Master's thesis, Department of Electrical Engineering, Linköping University, Sweden. With NIRA Dynamics, Linköping, Sweden.
- [MSc5] Henrik Nyblom (2004) Impedance control of the left ventricle. Master's thesis, Department of Electrical Engineering, Linköping University, Sweden. With North Dakota State University, USA.
- [MSc4] Ulf Petterson (2004) Identification and adaptive control of a CMM. Master's thesis, Department of Electrical Engineering, Linköping University, Sweden. With Brown & Sharp Inc., North Kingstown, Rhode Island, USA.
- [MSc3] Jon Kronander (2004) Robust automotive positioning: integration of GPS and relative motion sensors. Master's thesis, Department of Electrical Engineering, Linköping University, Sweden. With NIRA Dynamics, Linköping, Sweden.
- [Int1] Jeroen Hol (2004) Resampling in particle filters. Internship, Department of Electrical Engineering, Linköping University, Sweden. **This work was also published at the Nonlinear Statistical Signal Processing Workshop, Cambridge, United Kingdom, 2006.**
- [MSc2] Petter Frykman (2003) Applied particle filters in integrated aircraft navigation. Master's thesis, Department of Electrical Engineering, Linköping University, Sweden. With Saab Aerosystems, Linköping, Sweden.

[MSc1] Regina Rosander (2003) Sensor fusion between a synthetic attitude and heading reference system and GPS. Master's thesis, Department of Electrical Engineering, Linköping University, Sweden. With Saab Aerosystems, Linköping, Sweden.