Curriculum Vitæ of Niklas Wahlström

November 2020

Name:	Niklas Wahlström
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Born:	May 14, 1984
Citizenship:	Swedish

Academic Degrees

December 2015 **Doctor of Philosophy in Automatic Control, Linköping University**
Thesis: *Modeling of Magnetic Fields and Extended Objects for Localization Applications*
Supervisors: Prof. Fredrik Gustafsson and Prof. Thomas Schön

March 2013 **Licentiate of Engineering in Automatic Control, Linköping University**
Thesis: *Localization Using Magnetometers and Light Sensors*
Supervisor: Prof. Fredrik Gustafsson

June 2010 **Master of Science in Applied Physics and Electrical Engineering - International, Linköping University**
Specialization in engineering mathematics, automatic control and German language. Received the "Trygve Holm Medal" for best point average (highest grade in all courses).
Thesis: *Target Tracking Using Maxwell's Equations*

Academic Positions

2019 – **Assistant Professor, Department of Information Technology, Uppsala University**
Research topics include machine learning, deep learning and statistical signal processing.

2016 –2019 **Postdoctoral Researcher, Department of Information Technology, Uppsala University**

2010 – 2015 **PhD student, Department of Electrical Engineering, Linköping University**
Research topics included machine learning, extended target tracking, statistical signal processing, sensor fusion, filtering and estimation.

2006-2009 **Teaching assistant, Department of Mathematics, Linköping University**
Was responsible for exercise sessions in basic courses in calculus, linear algebra and optimization.

Other Merits

2020 - **Member of the board** Master's program in image analysis and machine learning, Uppsala University.

2017 - **Co-founder and board member of Stylaero AB, Linköping**
Have together with former colleges at Linköping University, an entrepreneur and an investor founded the company Stylaero AB providing the next evolution of human-computer interaction. The core technology of the company is based on my research on 3D positioning of magnetic objects.

Spring 2014 **Research visit, Imperial College, London**
Worked on modeling and control of high-dimensional time series by combining concepts from automatic control and machine learning. Supervisor: Dr. Marc Deisenroth, Department of Computing.

2007–2008 **Exchange student, Swiss Federal Institute of Technology, Zürich, Switzerland**
Studied the third year of my undergraduates studies abroad. Attended courses in electrical engineering, applied/theoretical physics, mathematics and programming.

Publications

7 peer-reviewed journal papers, 18 peer-reviewed conference papers,Google Scholar h-index 15, citations: 736.
All publications are available from `http://www.it.uu.se/katalog/nikwa778/publications`.

Reviewer Commitments

Act as reviewer for several international journals and conferences, currently averaging 10 reviews each year.

Teaching Experience

2019–2020	Course responsible, examiner, lecturer and course developer, **Advanced probabilistic machine learning** (4-5th year, 2 occasions), Uppsala University
2019	Course responsible, examiner, lecturer and course developer, **Deep learning** (PhD course, 1 occasion), Uppsala University
2017-2020	Lecturer, teaching assistant and developer, **Statistical machine learning** (3-4th year, 3 occasions), Uppsala University
2016	Teaching assistant, **Automatic Control II** (4th year, 1 occasions), Uppsala University
2012-2013	Teaching assistant and course developer **Sensor Fusion** (4-5th year, 2 occasions) Linköping University
2011	Supervisor, **Control Project Laboratory** (3rd year, 1 occasion), Linköping University
2010-2014	Teaching assistant, **Optimal Control** (4-5th year, 3 occasions), Linköping University
2010-2011	Teaching assistant, **Automatic Control** (3rd year, 2 occasions), Linköping University
2009	Teaching assistant, **Optimization** (2nd year, 1 occasion), Linköping University
2007-2008	Supplemental instructor, **Calculus** (1st year, 2 occasions), Linköping University
2006, 2009	Mentor, **Linear Algebra** (1st year, 2 occasions), Linköping University

Supervision

Current PhD students (as main supervisor)

2020 –	Philipp Pilar (previously at Vienna University of Technology, Austria)
2020 –	Carmen Lee (previously at Uppsala University, Sweden). Industrial, with Ericsson AB.

Current PhD students (as co-supervisor)

2020 –	Lisanne Knijff (previously at Utrecht University, The Netherlands)
2019 –	Daniel Gedon (previously at Delft University of Technology, The Netherlands)
2017 –	Carl Jidling (previously at Uppsala University, Sweden)
2016 –	Carl Andersson (previously at Uppsala University, Sweden)

Graduated licentiate students

2019	Carl Andersson, **Deep learning applied to system identification: A probabilistic per-spective**, co-supervisor.
2019	Carl Jidling, **Tailoring Gaussian processes for tomographic reconstruction**, co-supervisor.

Graduated MSc Students (as subject reader/ supervisor)

Supervisor/subject reader for 23 MSc students, 2012-present.

Presentations and Lectures

AI och fysiken, part of seminar celebrating the 20 years anniversary of the IT department, Uppsala University, Jan 2020.

Deep Learning applied to System Identification, Deep structures (workshop), Aalto University, Dec 2019.

Guest lecture about magnetic tracking and mapping in the course Electromagnetism I, Altoo University, May 2019.

Guest lecture about magnetic tracking and mapping in the course Electromagnetism I, Uppsala University, May 2019.

Invited seminar about my PhD thesis [PhD] at the Swedish Defence Research Agency, Linköping, December 2018.

Pose tracking of magnetic objects, Presentation at the VASCO workshop, Uppsala University. February 2018.

Pose tracking of magnetic objects, Seminar at the group of Visual Information and Interaction (Vi2), Uppsala University. November 2017.

Guest lecture about Deep Learning in the course Empirical Modeling, Uppsala University, September 2016,2017,2018,2019,2020.

Presentation at the Bayesian Meeting (Workshop), Uppsala University, November 2016.

Presented my research at an internal seminar, Division of Systems and Control, Uppsala University, June 2016.

Presented my research at the Swedish Defence Research Agency, Stockholm, October 2015 .

Presented the conference papers [C2]–[C5], [C7], [C9]-[C12] at their respective conferences.

Presented my Licentiate thesis [Lic], March 2013, Linköping University.

Presented paper [C5] at Reglermöte, Uppsala, June 2012.

Presented my Master's thesis [MSc], November 2010, Radionavigeringsnämnden, Stockholm.

Presented my Master's thesis [MSc], October 2010, Luleå University of Technology, Division of Systems and Interaction.

Several internal presentations at Automatic Control, Linköping University as well as in Division of Systems and Control, Uppsala University.

Pedagogical Education

2020	Supervision of PhD students (3 weeks)
2011	Teaching in higher education, Step 1: Learning, instructing and knowledge (6 hp)

Language Skills

Swedish	Mother tongue
English	Fluent
German	Fluent
Spanish	Basic

Computer Skills

- **Operating systems:** Windows, Linux
- **Office tools:** LaTeX, Ms Office
- **Computational tools:** Matlab, R, Mathematica, Python
- **Version Control:** Git, SVN, CVS

Complete CV with publication list

Complete CV is available at `http://www.it.uu.se/katalog/nikwa778/cv/NiklasWahlstromCV.pdf`