

Steffi Knorn

Signals and Systems, Uppsala University, PO Box 534, 75121 Uppsala, Sweden
++46 767624149, steffi.knorn@signal.uu.se

University degree

Ph.D., *Hamilton Institute, National University of Ireland Maynooth*, Ireland. Study period: 11/2008 – 2013
01/2013.

Supervisor: Prof. Richard H. Middleton, Co-Supervisor: Prof. Robert N. Shorten
Title: A Two-Dimensional Systems Stability Analysis of Vehicle Platoons

Diplom Ingenieur, *Otto-von-Guericke University Magdeburg*, Germany. Study period: 10/2003 – 10/2008
09/2008.

Degree: Master of Engineering in Control (Diplom Ingenieur Systemtechnik und Technische Kybernetik), with First Class Honours, Master thesis: Stability Issues in Distributed Systems of Vehicle Platoons

Employment history

Associate Senior Lecturer, *Uppsala University*, Uppsala, Sweden. 02/2016 –present

Research interests: multi-sensor estimation, energy harvesting and energy sharing, scalability and stability of multi-agent systems, modelling and system identification in medical applications

Teaching: Main teacher for third year courses "Embedded Signal Processing Systems" and "Signals and Systems"

Postdoc, *Uppsala University*, Uppsala, Sweden. 02/2014–01/2016

Research interests: multi-sensor estimation, energy harvesting and energy sharing, scalability and stability of multi-agent systems, and linear and nonlinear two-dimensional system theory

Teaching: third year course "Embedded Signal Processing Systems"

Postdoc, *University of Newcastle*, Callaghan, NSW, Australia. 01–12/2013

Research interests: control theory and its applications, linear and nonlinear two-dimensional system theory, controller design, and scalability and stability of port-Hamiltonian systems

Teaching: Developing online self-study material for first year course "Electrical Engineering 1",
Tutoring for fourth year course "Control System Design"

Casual Academic Lecturer, *University of Newcastle*, Callaghan, NSW, Australia. 04–07/2013

Main teacher for third year course "Signal Processing"

Freelance work, Maynooth, Ireland. 03–12/2011

Development, data acquisition and programming of an Apple iOS application ("Maynooth App")
Sold to the National University of Ireland Maynooth

Research Intern, *Hamilton Institute, National University of Ireland Maynooth*, Maynooth, Ireland. 04–09/2008

String stability problems in vehicle traffic

Research Intern, *Research and Development, Daimler AG*, Böblingen, Germany. 10/2007–03/2008

Design, implementation and comparison of different observer strategies to detect the roll angle of passenger vehicles

Research Assistant, *Department of Automation and Systems, Federal University of Santa Catarina*, Florianópolis, SC, Brazil. 03–09/2007

Modelling, design and implementation of supervisory control of a manufacturing cell

Research Assistant, *Max Planck Institute for Dynamics of Complex Technical Systems*, Magdeburg, Germany. 10/2004–02/2007

Simulation of biological networks using Matlab

Grants

- Innovation project**, *Erasmus+*, EU, 166 500 EUR. **09/2019-08/2022**
FACE-IT: Fostering Awareness on program Contents in higher Education using IT tools (co-applicant)
- Pedagogy project funds**, *Project grants for pedagogic development, Uppsala University*, Sweden, 125 000 SEK. **07/2019-12/2020**
Knowledge Ladders (co-applicant)
- Didactic projects**, *Faculty for Science and Technology, Uppsala University*, Sweden, 1 200 000 SEK. **05/2019-06/2022**
Changes in Ambition, Motivation and Performance in University Students (co-applicant)
- Outreach project**, *IEEE Outreach Fund*, IEEE/USA, 13 700 USD. **04-12/2019**
Hands-on control experiences in high-school: captivating students through balancing robots
- Starting grant**, *Vetenskapsrådet (VR) / Swedish Research Council*, Sweden, 3.920.000 SEK. **01/2019–12/2022**
Robust Scalability of Multi-Agent Systems
- Innovation for sustainable cities**, *Naturvårdsverket*, Sweden, 490.00 SEK. **07/2018-06/2019**
Smarta vattennät - Övervakning av dricksvattennät med avancerad dataanalys (co-applicant)
- Gamification Projects**, *Luleå University of Technology*, Sweden, 200.00 SEK. **07/2018-06/2019**
Pelvic floor activation through gamified exercising (co-applicant)
- TUFF - funding for pedagogical development**, *Faculty for Science and Technology, Uppsala University*, Sweden, 141.00 SEK. **01-12/2018**
Adaptation of examination form and grading to complexity and ambition level
- Pedagogy project funds**, *Project grants for pedagogic development, Uppsala University*, Sweden, 250.300 SEK. **07/2017-12/2018**
Development of a Concept Inventory Test tool for Electrical engineering (CITE)
- Teaching and Learning Grant**, *Faculty for Engineering and Built Environment*, The University of Newcastle, Australia, 9500AUD. **09/2013**
Development of self study material for the first year course "Electrical Engineering 1"

Project Management

- Assistent Project Leader**, *Advancing System Integration in Process Industry: Sensor Data Gathering, Wireless Networking, and Supervisory Control*. **07/2015–06/2018**
Financed by Vinnova, Sweden
Project partner:
– Uppsala University, Uppsala, Sweden
– Kungliga Tekniska högskolan (KTH), Stockholm, Sweden
– ABB Corporate Research, Västerås, Sweden
– Holmen Iggesund paper mill, Iggesund, Sweden

Distinctions and Awards

- Benzelius Award**, *Kungliga Vetenskaps-Societeten*, Uppsala, Sweden. **2017**
Awarded for fundamental results in the area of vehicle platooning and multiagent systems (including 25000SEK prize).
- Pedagogy Prize**, *Uppsala Teknolog- och Naturvetarkår*, Uppsala, Sweden. **2015**
This annual prize is awarded for excellence in teaching in the faculty of science and technology at Uppsala University.

Best Student Paper Award, *2nd Australian Control Conference*, Sydney, Australia, IEEE Control Systems Society technically co-sponsored national conference, attended by approximately 200 researchers. **2012**

The award (including 500AUD prize) is given to the best out of 50-100 papers authored by PhD students.

Faculty prize, *Faculty of Electrical Engineering and Information Technology*, Magdeburg, Germany. **2009**

Scholarship, *German National Academic Foundation*. **02/2007–09/2008**

Included an abroad scholarship to visit the Hamilton Institute, National University of Ireland Maynooth, Ireland, in 04-09/2008 and a travel scholarship to attend the ACM Symposium On Applied Computing 2008 in Fortaleza, CE, Brazil in 03/2008

Scholarship, *Friedrich Naumann Foundation for Freedom*. **04/2006–09/2007**

Included an abroad scholarship to visit the Department of Automation and Systems, Federal University of Santa Catarina, Florianópolis, SC, Brazil in 03-09/2007

Editorial Experience

01-12/2016: Guest Editor for Special Issue “Advanced Techniques for Networked Systems with Applications” for *Mathematical Problems in Engineering*

Scientific Reviewer Experience

since 2013: *Automatica*

since 2013: *IEEE Transactions on Automatic Control*

since 2014: *Multidimensional Systems and Signal Processing*

since 2015: *IEEE Transactions on Control of Network Systems*

since 2015: *IEEE Transactions on Control Systems Technology*

since 2015: *IEEE Transactions on Intelligent Transportation Systems*

since 2016: *IEEE Transactions on Wireless Communications*

since 2016: *International Journal of Robust and Nonlinear Control*

since 2013: *IEEE Conference on Decision and Control*

since 2014: several IFAC conferences

2014: *Control Engineering Practice*

2014: *Robotics*

Reviewed PhD theses

2018: Valerio Turri, “Look-ahead control for fuel-efficient and safe heavy-duty vehicle platooning”, Kungliga Tekniska högskolan (KTH), Stockholm, Sweden

2018: Anirban Krishna Bhattacharyya, “From Macroscopic to Microscopic Dynamics of Superconducting Cavities”, Uppsala University, Uppsala, Sweden

Supervision of Students

Ruslan Seifullaev, *Uppsala University*, Sweden.

since 08/2018

PhD student: Harvesting Based Signal Processing and Communications for Wireless Control Systems

Sinchan Biswas, *Uppsala University*, Sweden.

since 05/2017

PhD student: Energy harvesting in wireless communication networks

Paul Wijnbergen, *University of Groningen*, Netherlands.

03–08/2018

Research internship: Energy harvesting and wireless communication in control

25 students (Electrical Engineering, IT), *Uppsala University*, Sweden.

since 03/2016

B.Sc. and M.Sc. theses on different topics in the area of signal processing, communication and control

Robin Smit, *University of Groningen*, Netherlands. **03–08/2018**
Research internship: String Stability of Vehicle Platoons with Synchronised Motion

Aarti Sheorayan, *The University of Newcastle*, Callaghan, Australien. **07–11/2013**
Final Year Project (MSc): Development of Automatically Generated Exercise Questions Including Electrical Circuits

Participation in Courses and Programs

Academic leadership program, *Uppsala University*, Uppsala, Sweden. **08/2017-03/2018**
To support new group leaders in building their group and develop leadership talents

Supervising PhD students, *Uppsala University*, Uppsala, Sweden. **09-12/2016**
To inform and train young researchers in their role as supervisors to PhD students.

Doctoral supervisor training within the faculty of science and technology, *Uppsala University*, Uppsala, Sweden. **02-05/2016**
To inform and train young researchers in their role as supervisors to PhD students in the field of science and technology.

Academic teacher training course, *Uppsala University*, Uppsala, Sweden. **09-12/2014**
To strengthen the quality of education by developing competencies in planning and management of the teaching and learning process.

Student Representative

President of Student Representative, *Faculty for Process and Systems Engineering*, *Otto-von-Guericke University Magdeburg*, Germany. **2005-2007**
Initiated, organised and conducted first evaluation of faculty wide teaching and tutoring.

Elected Member of Student Representative, *Faculty for Process and Systems Engineering*, *Otto-von-Guericke University Magdeburg*, Germany. **2004-2007**

Languages

German: Native speaker

English: Full professional proficiency

Swedish: Professional working proficiency

Spanish: Professional working proficiency

Portuguese: Professional working proficiency

French: Limited working proficiency

Lived in Ireland & Australia 2008-2013

Living in Sweden since 2014

Lived in Argentina 2000-2001

Lived in Brazil in 2007

Six years of high school studies

Uppsala, 08 July 2019