Clas Veibäck

Curriculum Vitae

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Summary

I am a PhD student in the automatic control group at Linköping University. My research is focused on target tracking with knowledge in sensor fusion, signal processing, machine learning, control, image processing and software development. In particular my research has focused on modelling target behaviours and sensors. I have previous work experience in the aeronautical industry developing a control system for unmanned aerial vehicles and avionics for SAAB Gripen.

Education

2013– **PhD Student**, *Division of Automatic Control, Linköping University*, Linköping, Sweden.
Focus on target tracking with knowledge in sensor fusion, signal processing, machine learning, control, image processing and software development

2005–2010 **Engineering Physics Student**, *Uppsala University*, Uppsala, Sweden.
Focus on automatic control, signal processing and computer science

2008–2009 **Exchange Student**, *National University of Singapore*, Singapore.
Two semesters of exchange studies taking courses in statistics and computer science

Degrees

2016 **Licentiate of Engineering**, *Division of Automatic Control, Linköping University*, Linköping, Sweden.
Thesis title: *Tracking of Animals Using Airborne Cameras*

2010 **Master of Science in Engineering Physics**, *Uppsala University*, Uppsala, Sweden.
Performed at Instrument Control Sweden, Linköping. Thesis title: *Automatic Control of Unmanned Aerial Vehicles*

Working Experience

2013–2016 **Teaching Assistant**, Linköping University, Linköping.
Teaching in the courses Automatic Control, Engineering Project, Industrial Control Systems, Modelling and Simulation and Digital Signal Processing. Supervision of Master's thesis projects.

2012–2013 **System Developer**, Combitech, Linköping.
Worked as an IT consultant at SAAB Aeronautics developing safety critical software for Gripen. Tasks included model-based software development of recording functionality and qualification of a safety critical real-time operating system.

2010–2012 **System Developer**, Instrument Control Sweden, Linköping.
Mainly worked with implementation of algorithms for control, filters for sensor fusion and communication protocols in C/C++. Tasks included participation in design and verification of PCBs, hardware debugging of electronics, flight testing, product development and training and support for customers.

2005–2009 **Engineer**, Volvo Aero Corporation, Trollhättan.
Recurrent summer job. Tasks included software engineering and statistical analysis.

Publications

Journal* C. Veibäck, G. Hendeby, and F. Gustafsson. Uncertain timestamps in linear state estimation. *Submitted to IEEE Transactions on Aerospace and Electronic Systems*, Submitted 2017. ISSN 0018–9251

Conference J. Olofsson, C. Veibäck, G. Hendeby, and T. A. Johansen. Outline of a system for integrated adaptive ice tracking and multi-agent path planning. In *2017 Workshop on Research, Education and Development of Unmanned Aerial Systems*, Linköping, Sweden, Oct. 2017

Conference J. Olofsson, A. Lindahl Flåten, and C. Veibäck. Gaussian field current estimation from drift sea ice tracking with the labeled multi-bernoulli filter. In *2017 OCEANS 17 conference*, Anchorage, Alaska, USA, Sept. 2017

Conference J. Olofsson, C. Veibäck, and G. Hendeby. Sea ice tracking with a spatially indexed labeled multi-bernoulli filter. In *2017 20th International Conference on Information Fusion*, pages 376–383, Xi'an, China, July 2017

Thesis C. Veibäck. *Tracking of Animals Using Airborne Cameras*. Licentiate's thesis, Linköping University, Nov. 2016

Journal G. Bianco, M. Ilieva, C. Veibäck, K. Öfjäll, A. Gadomska, G. Hendeby, M. Felsberg, F. Gustafsson, and S. Åkesson. Emlen-funnel experiments revisited: methods update for studying compass orientation in songbirds. *Ecology and Evolution*, 2016. ISSN 2045-7758

Conference C. Veibäck, G. Hendeby, and F. Gustafsson. On fusion of sensor measurements and observation with uncertain timestamp for target tracking. In *2016 19th International Conference on Information Fusion*, pages 1268–1275, Heidelberg, Germany, July 2016

Conference F. Ceragioli, G. Lindmark, C. Veibäck, N. Wahlström, M. Lindfors, and C. Altafini. A bounded confidence model that preserves the signs of the opinions. In *2016 European Control Conference*, Aalborg, Denmark, June 2016

Conference S. Gunnarsson, Y. Jung, C. Veibäck, and T. Glad. IO (Implement and Operate) first - an alternative way to approach the automatic control subject. In *5:e Utvecklingskonferensen för Sveriges ingenjörsutbildningar*, Uppsala, Sweden, Feb. 2016

Conference C. Veibäck, G. Hendeby, and F. Gustafsson. Tracking of dolphins in a basin using a constrained motion model. In *2015 18th International Conference on Information Fusion*, pages 1330–1337, Washington, D.C., USA, July 2015

References

References are available on request.