Curriculum vitae for Svante Gunnarsson

Svante Gunnarsson
Born June 10, 1959 in Torpa, Östergötland, Sweden

Degrees

1983: Master of Science (Applied Physics and Electrical Engineering), Linköping University, Sweden
1988: Doctor of Philosophy, (Automatic Control), Linköping University, Sweden
1995: Docent (Automatic Control), Linköping University, Sweden

Employments

1983 - 1988: PhD student in Automatic Control, Linköping University, Sweden
1989 - 2002: Associate Professor in Automatic Control, Linköping University, Sweden
2002 - : Professor in Automatic Control, Linköping University, Sweden

Temporary appointments

1988 - 1996: Project leader for the project *Adaptive systems* connected to the *Center for Industrial Information Technology* at Linköping University.
1997 - 2002: Project leader for the project *Reglerteknik för verkstadsindustrin* connected to the *Center for Industrial Information Technology* at Linköping University.
1996 - 2005: Project leader for the project *Control and supervision of industrial robots* within the VINNOVA Competence Center ISIS.
2008 - : Research leader for the area Industrial Robotics within the VINNOVA Industry Excellence Center LINK-SIC.
1993: Member of the Program Board of the Mechanical Engineering Program at Linköping University.
1994 - 1996: Member of the Program Board of the Industrial Engineering and Management Program at Linköping University.
1997 - 2002: Member of the Program Board of the Applied Physics and Electrical Engineering Program at Linköping University.
2003 - 2006 : Chairman of the Program Board of the Applied Physics and Electrical Engineering Program at Linköping University.
2007 - : Chairman of the Board for Electrical Engineering, Physics and Mathematics at Linköping University.
2010 - : Head of Division of Automatic Control, Department of Electrical Engineering, Linköping Univesity.
1999 - 2009: Manager for *Center for Industrial Information Technology (CENIIT)* at Linköping University.

2000 - 2002: Director of undergraduate studies in Automatic Control.
2006: Chairman of the organizing committee for the 2nd International CDIO Conference, Linköping University, Sweden.
2011: Chairman of the program committee and of the organizing committe of 3:e Utvecklingskonferensen för Sveriges ingenjörsutbildningar, Linköping University, Sweden.
2014: Chairman of the organizing committee of Reglermöte 2014, Linköping University, Sweden.

External funding

2005 - 2008: Co-applicant of the project *Sensor integration with application in modeling and control of advanced industrial robots* funded by VR.

2008 - : Co-applicant of the VINNOVA Industry Excellence Center LINK-SIC

International appointments

Reviewer of numerous journal and conference papers.

Member of the Assessment Panel for the School of Information Technology and Electrical Engineering (ITEE) within the University of Queensland Research Quality Assessment (UQRQA), 2006.

Reviewer for Physical Sciences division of the Free Competition program of the Netherlands Organisation for Scientific Research (NWO), 2008.

Guest researcher at Université catholique de Louvain, Belgium, Sep. - Oct. 1993.

Industry collaboration

Extensive industry collaboration with ABB Robotics via the VINNOVA Competence Center ISIS and the VINNOVA Industry Excellence Center LINK-SIC. The collaboration has resulted in a large number of publications, several implementations in products, and one patent.

Awards and prizes

The IFAC *Automatica Prize Paper Award* for the paper *Adaptation and tracking in system identification - A survey*, published in *Automatica* 1990.

Rector's prize for excellent teaching within the Institute of Technolgy, Linköping University, 1993

Seven times recipient of the "Iplom" for excellent teaching from the student within the Industrial Engineering and Management program, Institute of Technology, Linköping

University.

The annual award Gyllen Moroten from the students at the Institute of Technology, Linköping University, 2011.

Main author of the application from the Automatic Control and Vehicular Divisions at Linköping University leading to the award Framstående Utbildningsmiljö (Centre of Excellent Quality in Higher Education) awarded by Högskoleveret (The Swedish National Agency for Higher Education), 2007.

Co-author of the application from the engineering program Applied Physics and Electrical Engineering leading to the award Årets Teknikutbildning (Engineering Education of the Year) awarded by Teknikföretagen, 2007.

Publications

Author or co-author of more than 25 journal papers in international journals with review procedure. Author or co-author of more than 50 conference papers. One patent.

Publications

[1] S. Gunnarsson. *Frequency domain aspects of modeling and control in adaptive Systems*. PhD thesis, Linköping University, Linköping, Sweden, 1988.

[2] S. Gunnarsson and L. Ljung. Frequency domain tracking characteristics of adaptive algorithms. *IEEE Transactions on Acoustics, Speech and Signal Processing*, 37:1072–1089, 1989.

[3] L. Ljung and S. Gunnarsson. Adaptation and tracking in system identification – a survey. *Automatica*, 26:7–21, 1990.

[4] S. Gunnarsson and B. Wahlberg. Some asymptotic results in recursive identification using Laguerre models. *International Journal of Adaptive Control and Signal Processing*, 5:313–333, 1991.

[5] S. Gunnarsson. Frequency domain accuracy of recursively identified ARX models. *International Journal Control*, 54:465–480, 1991.

[6] S. Gunnarsson. On the quality of recursively identified fir models. *IEEE Transactions on Signal Processing*, 40:679–682, 1992.

[7] S. Gunnarsson. On some asymptotic uncertainty bounds in recursive least squares identification. *IEEE Transactions on Automatic Control*, 38:1685–1688, 1993.

[8] H. Hjalmarsson, S. Gunnarsson, and M. Gevers. Model-free tuning of a robust regulator for a flexible transmission system. *European Journal of Control*, 1:148–156, 1995.

[9] F. Gustafsson, S. Gunnarsson, and L. Ljung. Shaping frequency-dependent time resolution when estimating spectral properties with parametric models. *IEEE Transactions on Signal Processing*, 45, 1997.

[10] H. Hjalmarsson, M. Gevers, S. Gunnarsson, and O. Lequin. Iterative feedback tuning: Theory and applications. *IEEE Control Systems*, 18:26–41, 1998.

[11] M. Norrlöf and S. Gunnarsson. Disturbance aspects of iterative learning control. *Engineering Aspects of Artificial Intelligence*, 14:87–94, 2001.

[12] S. Gunnarsson and M. Norrlöf. On the Design of ILC Algorithms Using Optimization. *Automatica*, 37:2011–2016, 2001.

[13] M. Norrlöf and S. Gunnarsson. Time and frequency domain convergence properties in iterative learning control. *International Journal of Control*, 75:1114–1126, 2002.

[14] M. Norrlöf and S. Gunnarsson. Experimental comparison of some classical iterative learning control algorithms. *IEEE Transactions on Robotics and Automation*, 18:636–641, 2002.

[15] M. Östring, S. Gunnarsson, and M. Norrlöf. Closed loop identification of an industrial robot containing flexibilitie. *Control Engineering Practice*, 11:291–300, 2003.

[16] S. Gunnarsson, V. Collignon, and O. Rousseaux. Tuning of a decoupling controller for a 2×2 system using Iterative Feedback Tuning. *Control Engineering Practice*, 11:1035–1041, 2003.

[17] M. Östring and S. Gunnarsson. Recursive identification of physical parameters in a flexible robot arm. *Asian Journal of Control*, 6:407–414, 2004.

[18] M. Norrlöf and S. Gunnarsson. A note on causal and cite iterative learning control algorithms. *Automatica*, 41:345–350, 2005.

[19] S. Gunnarsson and M. Norrlöf. On the disturbance properties of high order iterative learning control algorithms. *Automatica*, 42:2031–2043, 2006.

[20] R. Karlsson, D. Törnqvist, A. Hansson, and S. Gunnarsson. Automatic control project course: A positioning and control application for an unmanned aerial vehicle. *World Transactions on Engineering and Technology Education*, 5(2):291–294, 2006.

[21] J. Malmqvist, K. Edström, Svante Gunnarsson, and S. Östlund. The application of cdio standards in the evaluation of swedish engineering degree programmes. *World Transactions on Engineering and Technology Education*, 5(2), Oct 2006.

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[36] S. Gunnarsson and L. Ljung. Frequency domain description of the tracking capability and disturbance rejection trade-off in recursive identification. In *Proceedings of the IEEE Conference on Acoustics, Speech and Signal Processing*, pages 2077–2080, Glasgow,UK, 1989.

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[78] J. Wallén, M. Norrlöf, and S. Gunnarsson. Experimental evaluation of ilc applied to a six degrees-of-freedom industrial robot. In *2007 European Control Conference*, Kos, Greece, 2007.

[79] M. Amirijoo, P. Brännström, J. Hansson, S. Gunnarsson, and S. Son. Toward adaptive control of qos-importance decoupled real-time systems. In *IEEE International Workshop on Feedback Control Implementation and Design in Computing Systems and Networks*, Munich, Germany, 2007.

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[81] Svante Gunnarsson, I. Wiklund, T.Svensson, A. Kindgren, and S. Granath. Large scale use of the CDIO syllabus in formulation of program and course goals. In *Proceedings of the 3rd International CDIO Conference*, Cambridge, Massachusetts, June 2007.

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[83] J. Wallén, M. Norrlöf, and S. Gunnarsson. Arm-side evaluation of ILC applied to a six-degrees-of-freedom industrial robot. In *Proc. 17th IFAC World Congress*, 2008.

[84] S. Gunnarsson and I. Klein. Computer supported learning and assessment in engineering education. In *Proceedings of the 4th International CDIO Conference*, June 2008.

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