

Curriculum Vitae of Karl-Erik Årzén

Personal Data

Name	Karl-Erik Årzén
Born	4 Oct 1957, Malmö Sweden
Citizenship	Swedish
Family	Married, two children

Exams

- Master of Science (Electrical Engineering 1981, Lund University, Sweden)
- Doctor of Technology (PhD) in Automatic Control 1987, Lund University, Sweden

Employments

- Professor in Automatic Control, Lund University, 2000 – present
- Associate professor, Department of Automatic Control, Lund University, 1998-2000
- Researcher, Department of Automatic Control, Lund University, 1986-1998
- Research scientist (part-time), ABB Corporate Research, Lund, 1992-1995
- Research assistant, Department of Automatic Control, Lund University, 1981-1986

PhD Supervision

- PhD thesis "Piecewise Linear Control Systems", Prof Mikael Johansson, 1999, Dept of Signals, Sensors and Systems, KTH (50% joint supervision with Prof Anders Rantzer)
- PhD thesis "A Graphical Language for Batch Control", Assoc. Prof Charlotta Johnsson, 1999, Dept of Automatic Control, Lund University
- PhD thesis "Flexible Embedded Control Systems: Design and Implementation", Docent Johan Eker, 1999, Researcher, Ericsson Research, Lund (joint supervision with Prof Karl Johan Åström)
- PhD thesis "Topics in Modeling, Control, and Implementation in Automotive Systems", Magnus Gäfvert, 2003, Modelon AB, Lund (joint supervision with Prof Björn Wittenmark)
- PhD thesis "Integrated Control and Real-Time Scheduling", Assoc. Prof Anton Cervin, 2004, Dept of Automatic Control, Lund University
- PhD thesis "Batch Control and Diagnosis", Dr. Rasmus Olsson, 2005, PID AB, Göteborg
- PhD thesis "Resource-Constrained Embedded Control and Computing Systems" Dr. Dan Henriksson, 2006, Dassault Systemes (Dynasim)
- PhD thesis "Languages and Tools for Optimization of Large-Scale Systems", Assist. Prof Johan Åkesson, 2007, Dept of Automatic Control, Lund University & Modelon AB
- PhD thesis "Dynamic Modelling and Simulation of Liquid Food Process Lines", Tomas Skoglund, 2007, Researcher Tetra Pak AB (joint supervision with Prof Petr Dejmeš)

- PhD thesis "Disturbance Rejection and Control in Web Servers", Martin Ansbjerg Kjaer, 2009, Aarhus University (joint supervision with Assoc. Prof Anders Robertsson and Assoc. Prof Maria Kihl Palm)
- Currently the main supervisor for 4 PhD students.

Research Profile

My research has always been located in the intersection between control, automation, and computing systems. The topic of my PhD thesis was the use of AI techniques in closed loop control. After finishing that I worked four year in the IT4 project "Knowledge-Based Real-Time Control Systems" together with ABB and Alfa Laval Automation on information management and diagnosis in automation and control systems. This led to continued research on graphical programming languages for discrete event and batch control systems. At the end of 1990s I started working on integrated design of control and computing system, in particular feedback-based scheduling and control implementation techniques tailored for resource-constrained embedded platforms. This area has been my main focus during the last decade and has led to that my group is very well recognized and established in the international embedded and real-time systems community. In parallel with this I have also initiated the development of the open-source framework JModelica for Modelica-based modeling and optimization.

Assignments, Achievements and Awards

- The Dr Guido Carlo-Stella award in manufacturing automation from the World Batch Forum in 2006 for achievements in manufacturing automation and information structuring.
- Vice coordinator for the Lund part of eLLIIT – The Lund Linköping Strategic Research Area on IT and Mobile Communication, 2010 - present
- Member of the Strategic Management Board of the EU FP7 ArtistDesign NoE on Design of Embedded Systems, 2008 - present
- Leader of the Design for Adaptivity activity in ArtistDesign, 2008 - present
- Member of the Strategic Management Board of the EU FP6 Artist2 NoE on Design of Embedded Systems, 2005 -- 2008.
- Leader of the cluster Control for Embedded Systems in Artist2, 2005 -- 2008
- Partner and co-coordinator of the EU/IST FP7 STREP ACTORS (Adaptivity and Control Of Resources in Embedded Systems) 2008 -- present.
- Member of the board of the SSF Graduate School CPDC (Chemical Process Design and Control) 2005 -- 2008
- Chairman of IEEE Control System Society Tech. Comm. on Real-Time Control, Computing and Signal Processing 1999 -- 2002.
- Vice chairman of the IFAC Tech Committee on Real-Time Computing & Control, 2002-2004
- Member of the board of the SSF/ARTES research network on real-time systems 2000 - 2004.
- Member of the board of SNART (Swedish National Real-Time Association) 2001 – 2004

- Program director for SSF/IT national research program FLEXCON (Flexible Embedded Control Systems) , 2003 -- 2006
- Member of the management team of LUCAS: Center for Applied Software Research at Lund University, 1999 - present.
- Director of Studies, Department of Automatic Control, 2001 – present
- Member in the thesis committee or external examiner of 24 PhD or Licentiate theses
- Associate Editor for Real-Time Systems, 2010 - present
- Associate Editor for Automatica, 1991-1997
- Guest co-editor for the IEEE Control Systems Magazine on special issue on Trends on Software and Control, 2003
- Guest editor for Real-Time Systems special issue on Adaptivity in Embedded Systems, 2011
- Program Chair for the Euromicro Conference on Real-Time Systems (ECRTS) 2011
- Member of the IPC for numerous international conferences in the fields of control, real-time systems, and embedded systems.
- Reviewer for numerous conferences and journals in the fields of control, real-time systems, and embedded systems.
- Organizer of the 2nd IFAC Workshop on Computer Software Structures Integrating AI/KBS in Process Control, August 1994.
- Organizer of the “Real-Time Week in Lund”, August 1997
- Organizer of the First ARTIST2 International Workshop on Control for Embedded Systems, Lund, June 2005
- Organizer of the Second ARTIST2 International Workshop on Control for Embedded Systems, Urbana-Champaign, May 2007
- Main developer of the public domain software toolbox JGrafchart for discrete-event control.

Publications

- Around 40 articles in refereed international journals or book chapters
- Around 90 articles in international conferences
- For a complete listing see <http://www.control.lth.se/user/karlerik/publications/>