

Short Curriculum Vitae of A.J. (Arjan) van der Schaft

Education

Kandidaats (Bachelor equivalent) in Mathematics (cum laude), University of Groningen, 1976
Drs. degree (MSc equivalent) in Mathematics (cum laude), University of Groningen, March 1979

Ph.D. in Mathematics, University of Groningen, June 1983

Dissertation: *System theoretic descriptions of physical systems*, advisor J.C. Willems

Employment record

September 2005–present — *Full Professor*, Research Unit Systems, Control and Applied Analysis (from September 2006 - 2009, Director of Education for Mathematics)

(Johann Bernoulli Institute for Mathematics and Computer Science, University of Groningen)

March 2000–August 2005 — *Full Professor*, Chair Mathematical Systems and Control Theory (Department of Applied Mathematics, University of Twente)

November 1987–February 2000 — *Associate Professor* (UHD)

(Department of Applied Mathematics, University of Twente; September 1992 - September 1999 0.1 appointment at the Centre for Mathematics and Computer Science, Amsterdam)

September 1982–October 1987 — *Assistant Professor* (UD)

(Department of Applied Mathematics, University of Twente)

December 1979–August 1982 — Temporary staff member at the Department of Mathematics, University of Groningen

April 1979–November 1979 — Research assistant at the Department of Mathematics, University of Utrecht

1976–1979 — Teaching assistant at the Department of Mathematics, University of Groningen

Ph.D. students

dr. L.L.M. van der Wegen (September 1990) (co-supervision)

dr. H.J.C. Huijberts (May 1991) (co-supervision)

dr. J.M.A. Scherpen (March 1994) (supervision)

dr. W.C.A. Maas (March 1996) (supervision)

dr. G. Blankenstein (November 2000) (supervision and promotor)

dr. E. Schrijver (April 2001) (co-supervision and promotor)

dr. G. Golo (October 2002) (co-supervision and promotor)

dr. M. Cadic (October 2003) (promotor)

dr. V. Talasila (December 2004) (supervision and promotor)

dr. A.A. Julius (February 2005) (supervision and promotor)

dr. A.A. Moelja (November 2005) (promotor)

dr. S.N. Strubbe (December 2005) (supervision and promotor)

dr. R. Pasumathy (September 2006) (supervision and promotor)

dr. J.A. Villegas (May 2007) (co-supervision and promotor)

dr. N.E. Ligterink (August 2007) (co-supervision and promotor)

dr. R. Polyuga (April 2010) (supervision and promotor)

A. Venkatraman (April 2010) (supervision and promotor)

F. Kerber (supervision and promotor)

H. Vinjamoor (supervision and promotor)

M. Seslija (co-supervision and promotor)

E. Vos (co-supervision and promotor)

Member of numerous national and international Ph.D. examining committees and Habilitation committees.

Externally funded national and European projects since 2000

Project leader NWO project *Compositional Analysis and Specification of Hybrid Systems* (CASH), involving two Ph.D. projects in collaboration with group Formal Methods and Tools, Computer Science, UT, 2001–2006.

Project leader NWO project *Energy-based Representation, Analysis and Control of Infinite-dimensional Systems* (ERACIS), involving one Ph.D. project in co-supervision with H.J. Zwart, Applied Mathematics, UT, 2003–2007.

Project leader STW project *Port-based Approach of Complex Distributed-parameter system models for Analysis and Simulation* (PACDAS), involving one Ph.D. project and one post-doc project in co-supervision with P.C. Breedveld, Electrical Engineering, UT, 2003–2007.

Project leader NWO project *Compositional Analysis and Control of Hybrid Systems* (COMANCHES), involving one Ph.D. project, 2007–.

Project co-leader NWO project *Structure Preserving Model Reduction for Port Hamiltonian Systems* (SUPREMES), involving one Ph.D. project, 2009–.

Project co-leader STW project *”Energy-efficient design and control of mobile robotic sensor networks”* (ROSE), involving one Ph.D. project at the University of Groningen, 2009–.

Dutch node leader EU-TMR Network *Nonlinear and Adaptive Control: Tools and Algorithms for the User*, 2000–2004.

Participant EU-IST Programme HYBRIDGE on *Distributed Control and Stochastic Analysis of Hybrid Systems supporting Safety Critical Real-Time Systems Design*, 1-1-2002 – 1-4-2005.

Leader of Workpackage *Compositional specification of stochastic hybrid systems*, involving one Ph.D. position at the University of Twente. Supervisor of this Ph.D. project.

Participant EU-IST Programme GeoPleX on *Geometric Network Modeling and Control of Complex Physical Systems*, 1-3-2002 – 1-6-2006.

Leader of Workpackage *Fundamental methods in port-Hamiltonian systems*, involving one Ph.D. position at the University of Twente. Supervisor of this Ph.D. project.

Participant EU-IST Programme SICONOS on *Simulation and Control of Non-Smooth Dynamical Systems*, 1-9-2002 – 2006, involving one post-doc position.

Coordinator for University of Twente node within the EU Pierre and Marie Curie Training Network *Control Training Site*, 1-1-2002 – 2006.

Dutch coordinator Van Gogh project *Port-controlled Hamiltonian framework for the modeling and control of nonlinear physical-chemical distributed-parameter systems*, involving the University of Twente and Université Claude Bernard, Lyon, France, 2001–2003.

Coordinator for the University of Twente node of the EU Network of Excellence (*NoE*) *Hybrid Control: Taming Heterogeneity and Complexity of Networked Embedded Systems* (HYCON), 15-9-2004 – 2008.

Partner in the Austrian Center of Competence in Mechatronics, 2008–.

Participant Systems Biology Centre for Energy Metabolism and Ageing (SBC-EMA), University of Groningen, 2010–.

Editorial boards and Conference organization

Editor-at-Large for *European Journal of Control* (2001–),
Associate Editor for *Journal of Geometric Mechanics* (2008–),
Associate Editor for *Systems & Control Letters* (1988–1993, 2002–),
Associate Editor for *ESAIM COCV* (2006–2008),
Associate Editor for *SIAM Journal on Control and Optimization* (1999–2003),
Associate Editor for *IEEE Transactions on Automatic Control* (1993–1997),
Member Editorial Board *Journal of Nonlinear Science* and *Nonlinear Science Today* (1991–1995),
Member Editorial Board *CWI Tracts* (1996–2006).
Member Steering Committee of the *Mathematical Theory of Networks and Systems Symposium* (Biennial International Conference).
Member Board of the Dutch Institute for Systems and Control (DISC)
Member of numerous Organizing and Program committees for conferences.
Arjan van der Schaft co-organized and was editor for the
2nd IFAC Workshop on Lagrangian and Hamiltonian Methods for Nonlinear Control, Seville, April 2003
NCN Workshop Stability and Stabilization of Nonlinear Systems, Ghent, April 1999
4th IFAC Nonlinear Control Systems Design Symposium, Enschede, July 1998.
He will be co-organizing the 21st edition of the symposium *Mathematical Theory of Networks and Systems* (MTNS) at the University of Groningen in 2014.

Further signs of recognition

Arjan van der Schaft is Fellow of the Institute of Electrical and Electronics Engineers (IEEE) since 2002.
He is author of a most cited research paper. (The paper “A.J. van der Schaft, L_2 -gain analysis of nonlinear systems and nonlinear state feedback \mathcal{H}_∞ control, *IEEE Trans. Autom. Contr. AC-37*, pp. 770-784, 1992” was the Dutch research paper in international scientific journals within the Technical Sciences that obtained the largest number of citations during the evaluation period 1994–1998. *Source*: Nederlands Observatorium voor Wetenschap en Techniek, Wetenschaps- en Technologie-indicatoren Rapport 2000, page 59, Table 3.10.)
Invited semi-plenary speaker at the International Congress of Mathematicians (a prestigious invitation within mathematics), Madrid, 22-30 August 2006: *From networks models to geometry: a new view on Hamiltonian systems*.
His paper ‘An approximation method for the stabilizing solution of the Hamilton-Jacobi equation for integrable systems, a Hamiltonian perturbation approach’, *Transactions of the Society of Instrument and Control Engineers (SICE)*, 43, pp. 572–580, 2007, received the SICE Takeda Best Paper Prize 2008.

Publications

Arjan van der Schaft is the (co-)author of six textbooks and monographs, including *Nonlinear Dynamical Control Systems* (Springer, 1990), *L_2 -Gain and Passivity techniques in Nonlinear Control* (Springer, 2000), *An Introduction to Hybrid Dynamical Systems* (Springer, 2000), and *Modeling and Control of Complex Physical Systems* (Springer, 2009).
He has (co-)authored around 100 journal articles and more than 200 refereed contributions to proceedings or books. His current *h-index* according to the ISI Web of Knowledge is 28.