

# Curriculum Vitae for Anders Lansner

Born December 6, 1949 in Stockholm

Anders Lansner received his MSc degree in Engineering Chemistry from KTH Royal Institute of Technology in 1974. After a few years as an employee at the National Board for Workers Safety and Health (1975 - 1979), he took up studies in computer science and received his PhD degree in Computer Science in March 1986 on a thesis entitled “Investigations into the Pattern Processing Capabilities of Associative Nets” with Prof. Stefan Arnborg as supervisor and Prof. Jan-Olof Eklundh as co-supervisor.

Dr Lansner was appointed assistant professor (forskarassistent) in computer science in 1987, senior lecturer (universitetslektor) in 1989, associate professor (docent) in 1992, and Professor at KTH, Department of Numerical Analysis and Computer Science (NADA) in 1999. Since March 2002 he holds a professor chair in “Computer science with applications in the natural sciences” at Stockholm University with his office at KTH. In March 2013 he was formally appointed Affiliated Professor at KTH CSC. Since 2017 he is Emeritus Professor, working full time, at Stockholm University Mathematics and KTH, School of Electrical Engineering and Computer Science, Department of Computational Science and Technology.

In 1987 Dr Lansner founded the neural network research group SANS (“Studies of Artificial Nervous Systems”) and has been heading that group since then. In 2005 the SANS group changed name to CBN (Computational Biology and Neurocomputing), and in July 2006 it merged into the Department of Computational Biology at CSC, for which he was director July 2006 – September 2007.

October to December 2002 Dr Lansner was guest professor at the Brain and Mind Center at École Polytechnique Fédérale de Lausanne (EPFL), Switzerland (Headed by Prof. Henry Markram).

January 2004 – December 2007 CBN was the Center of Excellence in Biomimetics within an EC-FP6 funded Network of Excellence in Artificial Olfaction (GOSPEL).

From September 2005 Dr Lansner is PI of Stockholm Brain Institute ([SBI, www.stockholmbrain.se](http://www.stockholmbrain.se)) and manages the computational and modeling platform of SBI. During 2007 - 2013 he was board member and Swedish representative of INCF (International Neuroinformatics Coordinating Facility) and 2007 – 2008 also responsible for the Swedish INCF node ([www.incf.org](http://www.incf.org)).

## *Faculty and Professional Organizations*

Dr Lansner is Member of the Royal Swedish Academy of Engineering Sciences (IVA) since April 2008 and in the scientific advisory board of the Helmholtz Association, Alliance on System Biology, from February 2009. He is former board member of the European Neural Network Society (ENNS), in the Program committee of The Annual Computational Neuroscience Meeting (CNS) 1998-2000, member of the International Neural Network Society (INNS), and member of the Society for Neuroscience and of the Swedish Physiological Society.

## *Organized Conferences, Workshops and Summer Schools 2003-present*

An international workshop on olfaction, the GOSPEL Biotechno Workshop: From Biological Olfaction to Sensor Technology. Skokloster Wärdshus, February 25-26, 2008.

The 1<sup>st</sup> INCF Workshop on Large-scale Modeling of the Nervous System, December 2006.

The 3<sup>rd</sup> Nordic Workshop in Neuroinformatics, Aronsborg, September 9-11, 2005 (with Sten Grillner, Karolinska institutet).

The “PSCI Biocomputing Workshop” at Wennergren Center, October 21-22, 2004 (with Jeanette Hellgren Kotaleski).

Member of the organizing committees of The Seventh International Conference on Information Fusion (FUSION 2004), Stockholm, June 28 – July 1 and The eighth “From Animals to Animats” conference (SAB 2004), Los Angeles, July 13 – 17.

*International committees etc.*

Referee (neurocomputing) for the Norwegian Science Council, spring 2003. External examiner (“opponent”) on a licentiate dissertation (Robert Pallbo) on neural networks, Lund University, March 1994 and on a PhD dissertation (Christian Balkenius) Lund May 1995; Kwok Chong, Univ Leicester, UK, June 2007; Martin Pospischil, Univ Pierre and Marie Curie, France, September 2007. Member of several PhD grading committees. Associate editor of *Frontiers in Neuroinformatics* and reviewer for several journals and funding agencies.

*Selected presentations 2003 – present*

June, October 2003	Two seminars on “Se Hjärnan” for Vetenskapsrådet and Riksutställningar in preparation for a national exhibition opening 2005
December 2003	“Memory modulation in an attractor model of cortical memory”, The Riken-Sweden Symposium on Neuroscience, Wako, Tokyo, December 1-3
April 2004	93 <sup>rd</sup> Dahlem workshop, “Microcircuits: The Interface between Neurons and Global Brain Function”. Organizer: Sten Grillner. Berlin April 25-30
August 2004	Lecture on “Large-scale cortical network models” at the Edinburgh Summer School in Neuroinformatics Simulation Tools, organized by University of Edinburgh,
September 2004	“Towards Cortex sized Artificial Nervous Systems”, presentation at the Knowledge-Based Intelligent Information & Engineering Systems (KES) 2004 Conference, Wellington, New Zealand, September 22-24
April 2005	“Modelling the associative memory capabilities of attractor networks with specific reference to cortical olfactory processing”, 11 <sup>th</sup> Int Symp on Olfaction and Electronic Nose (ISOEN), Barcelona, April 13-16
May 2005	Workshop on “Data-Driven Modelling and Simulation in Neuroscience” Hohenwart Forum, Hohenwart, Germany.
January 2007	“From ANN to biomimetic information processing”, invited presentation at the Workshop on “Bio-inspired Signal Processing” Barcelona, Spain.
September 2007	“Dynamic associative memory properties of a biophysically detailed neuronal network model of neocortical layers 2/3”, invited presentation on September 26 at Gatsby Computational Neuroscience Unit, UCL, London
April 2008	“Simulation of large-scale architectures of spiking neurons” invited presentation at the First Capo Caccia workshop toward Cognitive Neuromorphic Engineering, April 21-29, Capo Caccia, Sardinia, Italy.
October 2008	“Associative memory properties of a biophysically detailed neuronal network model of layers 2/3 of mammalian cortex”, invited presentation at the Joint Cold Spring Harbor Lab and Wellcome Trust meeting on Integrative Approaches to Brain Complexity, October 1-5, Hinxton, Cambridge
November 2008	“Brain Modeling – Current Status and Future Outlook”, invited presentation at IBM Life Sciences Modeling & Simulation Summit, Palisades, NY
November 2009	“Large scale modeling of cortical associative memory function”, invited presentation at the Neuroparkville Symposium on Neuroscience, Melbourne, and “Brain modelling and brain-inspired computing” invited presentation in the Melbourne University ICT for Life Sciences lecture series.
January 2010	“Modularization dramatically increases stability of an oscillating attractor neural network”. Invited presentation at the 2 <sup>nd</sup> Polish-Norwegian workshop on Neuroinformatics, Warszaw Jan 14-16, 2010.
March 2010	“Memory, Oscillations, and Coordination in a Computational Model of Layers 2/3 of Neocortex”, invited presentation at the conference Brain Coordination Dynamics, March 1 – 5, 2010, Western Caribbean Sea.
September 2010	“Perception, Memory and Oscillations in a Hodgkin-Huxley Model of Neocortical Layers 2/3”, invited presentation at the conference Brain Oscillations in Health and Disease, September 10 – 11, 2010, Karolinska institutet.
October 2010	“Memory and Oscillations in Modular Model of Neocortex Layers 2/3”, public lecture at Forschungszentrum Jülich, October 7, 2010.
November 2010	Invited presentation in the workshop on “Making Perfect Life Bioengineering in the 21 <sup>st</sup> century” in the European Parliament on November 11, organized by Rathenau Institute, Netherlands.

February 2011	“Experience from running spiking attractor neural networks on the Blue Gene cluster supercomputer”, invited presentation at the PRACE Scientific Seminar HPC Boosts Science, February 21 2011, KTH.
July 2011	“Perceptual and memory functions in a cortex-inspired attractor network model”, keynote presentation at the Annual Computational Neuroscience Conference CNS 2011, Stockholm, July 25, 2011.
August 2011	“Very large-scale brain simulations using supercomputers”, invited presentation for the PDC HPC Summer School, at KTH, August 25, 2011
March 2012	“Computational modeling of cortex and basal ganglia in reward learning and action selection”, invited presentation at the Meeting of the Translational Sensori-motor Network, Sigtuna March 15, 2012.
March 2013	“Supercomputer simulations of detailed and abstract neural network models”, invited presentation at the Celsius-Linné symposium, Uppsala, February 15, 2013.
April 2015	Participant in Crosstalk.TV, discussion about the brain (video clip on home page)
January 2017	Intervju about the brain (in Swedish, video clip on home page)
November 2017	Talk about AI and the Brain at IVA (video clip on home page)
November 2017	Talk at the Swedish Parliament at Rifo/IVA kunskapslunch

### *Supervised doctoral students, postdoctoral fellows*

Magnus Stensmo, Lic 1991  
 Örjan Ekeberg, PhD December 1992  
 Hans Tråvén, PhD June 1993  
 Björn Levin, PhD October 1995  
 Per Hammarlund, PhD June 1996  
 Erik Fransén, PhD October 1996  
 Jesper Tegnér, PhD September 1997<sup>1</sup>  
 Anders Holst, PhD September 1997  
 Tom Wadden, PhD June 1998  
 Jeanette Hellgren Kortaleski, PhD June 1998  
 Roland Orre, Lic June 1998  
 Guang Li, PhD November 1999<sup>2</sup>  
 Anders Sandberg, PhD June 2003  
 Baran Cürüclü, Lic Dec 2003<sup>3</sup>  
 Christopher Johansson, Lic, June 2004  
 Peter Raicevic, Lic, December 2004  
 Martin Rehn, Lic, May 2005  
 Baran Cürüclü, PhD, March 2005<sup>3</sup>  
 Pål Westermark, PhD, September 2005  
 Christopher Johansson, PhD, October 2006

Martin Rehn, PhD, November 2006  
 Malin Sandström, Lic, June 2007  
 Mikael Huss, PhD, June 2007<sup>4</sup>  
 Fredrik Edin, PhD, January 2008<sup>5</sup>  
 Daniel Gillblad, PhD, June 2008  
 Mikael Djurfeldt, PhD, June 2009<sup>6</sup>  
 Johannes Hjorth, PhD June 2009<sup>7</sup>  
 Malin Sandström, PhD March 2010  
 Benjamin Auffarth, PhD March 2012  
 Simon Benjaminsson, PhD, June 2013  
 Mikael Lundqvist, PhD, October 2013  
 Rebecca Steinert<sup>8</sup>, PhD, December 2014  
 Bernhard Kaplan, PhD, May 2015  
 Pierre Berthet PhD, Jan 2016  
 Nasim Farahini, PhD, May 2016<sup>9</sup>  
 Phil Tully, PhD May 2017  
 Florian Fiebig, Dec 2018

Postdoctoral collaborators Alexander Kozlov October 1998 – 2010; Martin Rehn March 2007 – Feb 2009; Paweł Herman February 2009 – Jan 2011; Cristina Meli January 2011 – December 2013, Henrik Lindén September 2011 – September 2013, Susanne Kunkel Feb 2016 – Jan 2018

<sup>1</sup> Co-supervised with KI (Prof. Sten Grillner, Neuroscience Dept.)

<sup>2</sup> Co-supervised with Chalmers (Prof. Bertil Svensson, Computer Sci. and Eng. Dept.)

<sup>3</sup> Co-supervised with University of Mälardalen (Prof. Björn Lisper, Computer Eng. Dept.)

<sup>4</sup> Co-supervised with Jeanette Hellgren

<sup>5</sup> Co-supervised with Jesper Tegnér

<sup>6</sup> Co-supervised with Örjan Ekeberg

<sup>7</sup> Co-supervised with Jeanette Hellgren

<sup>8</sup> Co-supervised with Daniel Gillblad, SICS

<sup>9</sup> Co-supervised with Ahmed Hemani, KTH ICT