

CURRICULUM VITAE

KRISTIAAN PELCKMANS

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1. EDUCATION

- 1978: Born 3 November 1978, Turnhout, Belgium;
- 1996-2000: Master in Computer Science (June 2000), K.U.Leuven, Belgium.
- 2001-2005: Ph.D. in Applied Sciences, department Electrical Engineering (ESAT), K.U.Leuven, Belgium, Mai 2005.
- 2005-2009: Postdoctoral researcher funded by a.o. a FWO grant (Vlaams Wetenschappelijk Fonds) (2008-2009), Belgium.
- 2009-2014: Assistant Researcher/Professor ('forskarassistent') in division of Systems and Control (SysCon, Research department Information Technology (IT), University of Uppsala, Sweden.
- 2014 - 2018: Senior research fellow in division of Systems and Control (SysCon, Research department Information Technology (IT), University of Uppsala, Sweden.
- 2018-... Docent ('Associate Professor') in division of Systems and Control (SysCon, Research department Information Technology (IT), University of Uppsala, Sweden.

2. DOCTORAL DEGREE

- (1) Ph.D. in Applied Sciences, department Electrical Engineering (ESAT), SCD/SISTA, K.U.Leuven, Belgium.
- (2) Supervisors professor Johan A.K. Suykens and professor Bart De Moor.
- (3) Title: 'Primal-Dual Kernel Machines', on the applications of convex optimization techniques for the design of new kernel machines in machine learning.
- (4) Date of Defence: 30 May 2005.
- (5) (Co)authored 30+ published Journal Publications, and 50+ Peer reviewed Conference Publications, 2 book chapters and a software toolbox;
- (6) Teaching Assistant for 'Support Vector Machines: Theory and Practice', 'System Theory' and 'System Identification', in ESAT - SCD/SISTA;
- (7) (In ESAT, KULeuven) daily supervisor of 4 Ph.D. Students (P.Karsmakers, M.Signoretto, T.Falck, V.Van Belle, KULeuven);

3. FURTHER ACADEMIC CAREER

- (1) At the laboratory of ESAT - SCD/SISTA, K.U.Leuven, Belgium, 2005-2009
- (2) Covered by a Postdoctoral Research Grant by FWO (A 4/5 SDS 4683) since september 2007 till april 2009.
- (3) Visit (3 Months), Fraunhofer-Gesellschaft (Fh.G.), IPSI, Darmstadt, Germany (with U. von Luxburg and prof. T. Hofmann) and Max Planck Institute (MPI), Tübingen (prof. B. Schölkoph), grant FWO, Belgium, 2005.
- (4) Short visit Southampton, ISIS, prof. J. Shawe-Taylor, visiting grant from the PASCAL Network of Excellence, 2006

- (5) Visit to CSML at UCL, London, UK, prof. J. Shawe-Taylor, 1 October 2007 – 31 June 2008, visiting grant FWO. Affiliate Research Fellow at University College London (UCL), UK.
- (6) Assistant Professor/Research Fellow (Forskarassistent) 1 April 2009 - 30 March 2014, at Uppsala University, Department of Information Technology, Division of Systems and Control (SysCon).
- (7) Senior research fellow at Uppsala University, 2014-2017, Department of Information Technology, Division of Systems and Control (SysCon).
- (8) Docent ('associate professor) since 2018.

4. CURRENT ACTIVITIES

- (1) Responsible for undergraduate course 'System Identification' (2009-2010, 2010-2011, 2011-2012, 2012-2013, 2013-2014) and 'Introduction to Computer Control Systems' (2011, 2012, 2013).
- (2) I have been running the Ph.D. courses entitled 'Nonlinear System Identification and its applications', (2011), 'Next Generation Bioinformatics Tools: From Data Generation to Data Analysis', (2012), 'Compressive Sensing and Structured Random Matrices', (2012), 'Spring 2015, and 'A graduate course in Reinforcement learning' (2017)¹. I have lectured on 'Fundamentals of Machine Learning', see².
- (3) Formal Supervisor of 3 Ph.D. Students since 2011:
 - Liang Dai conducts a Ph.D. entitled 'Identification of Medical Endocrine Systems', and focusses on techniques of compressive sensing and low-rank matrix recovery. He defended his licentiate thesis entitled 'On some sparsity related problems and the randomized Kaczmarz algorithm' (2011-2014), T. Schön is supervising him further.
 - Liu Yang conducted a joint Ph.D. degree with ESAT, KULeuven with supervisor Prof. Dr. Ir. S. Van Huffel and Prof. Dr. Ir. J.A.K. Suykens, entitled 'Computational techniques for prognosis in breast cancer studies: design and analysis' (terminated by mutual agreement). (2011-2014).
 - Johannes Nygren, dealing with 'Techniques of Automatic Control in Waste-Water Processes' (2009-2014) with supervisor B. Carlsson. Currently finished a dissertation entitled 'On the Stability Analysis of Output Feedback Schemes'. (2014-2016).
- (4) I am/was main responsible/supervisors for the postdoctoral researchers:
 - Alexander Szorkovszky, on 'Linking social behaviour to the brain: dynamical modelling', (2014-2017).
 - Hongli Zeng, on 'Linkin Social Behavior to the Brain: Machine Learning', (2014-2017).
 - Sholeh Yasini, on 'Online Machine Learning for Automatic Control: the Kalman Filter revisited', (2015-2017).
- (5) Member of the board of Centre of Interdisciplinary Math (CIM) 2010-2016.³

5. FUNDING

- Funded by Faculty Funding (Uppsala University, Department of Information Technology, 2009-2012).
- Research affiliate of ERC grant entitled 'Systems and signals tools for estimation and analysis of mathematical models in endocrinology and neurology' (SysTEAM) funded via ERC Advanced Grant no. 247035., 2009-2015 (budget: 24mSEK).
- Principal Investigator of a VR Project entitled 'Adaptive Modeling and Online Learning with Large Sets of Unknowns', 2013-2017 (budget: 8mSEK).
- (Principal) Investigator of a grand funded by KAW, entitled: 'Linking social behavior to the brain', 2014-2018 (budget: 30mSEK), together with D. Sumpter (PI: UU/math) and

¹http://www.it.uu.se/research/systems_and_control/education/2017/relearn

²<http://www.it.uu.se/edu/course/homepage/FOML2015>.

³<http://www.math.uu.se/CIM/>

N. Kolm (PI: SU/zoologi). This project drives a team consisting of 12-15 researchers in various stages of their career.

6. AND

I act(-ed) as co-supervisor for the Ph.D. students

- P. Karsmakers (KULeuven, ESAT, BE) who obtained his Ph.D. degree in April 2010.
- V. Van Belle (KULeuven, ESAT, BE) who obtained her Ph.D. degree in Dec. 2010.
- M. Signoretto (KULeuven, ESAT, BE) who obtained her Ph.D. degree in 2012.
- K. De Brabanter (KULeuven, ESAT, BE) who obtained her Ph.D. degree in 2013.
- J. Spiegelberg (UU/physics), with preliminary title 'Development, Simulation and Statistical Analysis of Inelastic Electron Scattering Theory', (2014 - 2018).
- T. Chistiakova (UU/IT/syscon), with preliminary title 'Machine learning techniques for wastewater control problems' (2014 - 2019).
- F. Olsson (UU/IT/syscon), with preliminary title 'Ambulatory analysis of human movement and balance' (2015 - 2020).

I acted as member of the jury of

- V. Van Belle, on 'Non-linear survival models and their application in breast cancer prognosis', who was awarded a magna cum laude degree, (KULeuven, BE), 2010.
- B. Granovskiy, on 'Modeling Collective Decision-Making in Animal Groups', (UU/math, SE) 2013.
- T. Falck, 'Nonlinear System Identification using Structured Kernel Based Modeling', (KULeuven, BE), 2013.
- J. Andersson, on 'On invertibility of the Radon transform and Compressive Sensing', (KTH/math, SE), 2014.
- A. Onose, on 'Greedy Adaptive Algorithms for Sparse Representations' (main opponent) (TUT/EECS, FI), 2014.
- S. Magureanu, 'Efficient Online Learning under Bandit Feedback', (KTH, SE), 2018.

I acted as (main) organizer of a number of international workshops:

- (WEHYS) New Challenges in Theoretical Machine Learning: Learning with Data-dependent Concept Spaces, organized in connection with the international conference on Neural Information Processing Systems (NIPS), 2008. (Co-organizers were J.Shawe-Taylor, UCL/UK, S. Ben-David (Waterloo, CA), A. Blum (Carnegie-Mellon, US), M.F. Balcan (Carnegie-Mellon and Microsoft Research, US)). This workshop considered problems of learning with empirical hypothesis spaces.
- (ALEGA) Open House on Algorithms for Graph Label Prediction, Bonn 2008, (co-organized with Thomas Gaertner (Fraunhofer IAIS/DE), Mark Herb1234?jster(UCL/UK)). This workshop discussed problems of learning over graphs.
- (VASCO-i) Together with L. Mattson, E.Zackrisson e.a., I organised the kick-off workshop on 'The Vanishing & Appearing Sources during a Century of Observations (VASCO) project', 2018⁴

I act as organizer of graduate courses courses in UU/IT:

- Prof. E. Bai (UIOWA/EECS), 'Nonlinear System Identification and its applications', 2011.
- Prof. Dr. Hesham H. Ali (UNOmaha/IST), 'Next Generation Bioinformatics Tools: From Data Generation to Data Analysis', 2012.
- Prof. H. Rauhut (Uni-Bonn), 'Compressive Sensing and Structured Random Matrices', 2012.
- Kristiaan Pelckmans (UU/IT), 'Fundamentals of Machine Learning', 2015.
- Prof. Alexandre Proutiere (KTH, SE), 'A graduate course in reinforcement learning', 2017.

⁴<https://vasconsite.wordpress.com/vasco-i/>