

Curriculum Vitae: Morten Mørup

CURRENT POSITION	Associate Professor, Section for Cognitive Systems, DTU Informatics
PERSONAL	Born 12 January 1978
CONTACT INFORMATION	Home Slotsvænget 26 2800 Kgs. Lyngby Denmark <i>phone:</i> 32 17 41 81 / 27 29 29 75 <i>e-mail:</i> morten.morup@gmail.com <i>www:</i> www.mortenmorup.dk Work Cognitive Systems, DTU Informatics Richard Petersens Plads, bld. 321/118 2800 Kgs. Lyngby Denmark <i>phone:</i> 45 25 39 00 <i>fax:</i> 45 87 25 99 <i>e-mail:</i> mm@imm.dtu.dk <i>www:</i> www.imm.dtu.dk/~mm
RESEARCH INTERESTS	Machine Learning, Unsupervised Learning, Multi-way/Tensor Decomposition Methods, Bayesian Inference, Neuroimaging, Complex Networks.
EDUCATION AND RESEARCH EXPERIENCE	Copenhagen University Bio-physics and Mathematics: (Fall 1999 - Summer 2001) Washington State University Exchange student following courses within Computational Neuroscience (Spring 2004) Technical University of Denmark Cand. Polyt. Applied Mathematics (February 2005) PhD Intelligent Signal Processing Group at DTU Informatics (September 2008) Dissertation title: Decomposition Methods for Unsupervised Learning. PostDoc Intelligent Signal Processing Group at DTU Informatics (2008-2009) Project: PERCEPT: Perceptual Consciousness Explication and Testing (http://www.nest-percept.eu/) Assistant Professor, Section for Cognitive Systems, DTU Informatics (Current Position) Stanford University Visiting Ph.D. Student at Department for Scientific Computing (Summer 2006 - Fall 2006) Host: Professor Gene H. Golub UC Berkeley Visiting Ph.D. Student at Department of Mathematics (Fall 2007) Host: Morrey Assistant Professor Lek-Heng Lim
HONORS AND AWARDS	Lundbeck Foundation Fellowship 2012 (10. mio. DKK) Best Teacher at DTU Informatics 2011 Best Thesis Award: Direktør Peter Gorm-Petersens Mindelegat 2008 (14.000 DKK) Elite Research Travel Scholarship 2007: Danish Ministry of Science (250.000 DKK) Travel Award: Organization for Human Brain Mapping 2005
TEACHING EXPERIENCE AT DTU INFORMATICS	02450: Introduction to Machine Learning and Data Modelling (Spring 2010-Spring 2012), 02582: Computational Data Analysis (Spring 2010 - Spring 2012), 02901: Advanced Digital Signal Processing (Summer 2008-2012), 02405: Probability Theory (2005-2007), 02409: Multivariate Statistics (2004-2005), 02701: Introduction to Operations Research (2002-2003). Have further given lectures or been assistant teacher in the following courses: 02451 Digital Signal Processing, 02457 Non-linear signal processing , 02459 Machine Learning for Signal Processing. Supervisor and Co-supervisor of several PhD students, masters and bachelor students.
PROFESSIONAL ACTIVITIES	Organizer of the 2009 European Workshop on Challenges in Modern Massive Data Sets (with L.-H. Lim, M. Mahoney, L.K. Hansen, G. Carlsson), Technical University of Denmark, Lyngby, Denmark, July 1-4, 2009. (http://mmds.imm.dtu.dk) Member of the Machine Learning for Signal Processing Technical Committee of the IEEE Signal Processing Society. Reviewer for European Research Council Reviewer for the Netherlands Organization for Scientific Research (NWO). Editorial Board Member of the World Journal of Methodology. National Representative for FuturICT.
SELECTED INVITED TALKS	Tensor Decomposition Approaches for the Modeling of Multi-Graphs, TRICAP 2012, Brücke, Netherlands; Non-parametric Bayesian Models for Complex Networks, Vision Day 2012, DTU Informatics; Bayesian Models for Complex Networks, Bio-Complexity Meetings and Special Lectures 2012, NBI, Copenhagen University; Psychology and Brain 2011 symposium on Applying Trilinear Component Analysis to ERP and fMRI data, Heidelberg, Germany, June 2011; Inauguration Symposium of the Contact project granted by the Lundbeck Foundation, Charlottenlund, May 2011; NIPS workshop on Tensors Kernels and Machine Learning, Canada 2010; BIT50 - Trends in Numerical Computing, Lund, Sweden, June 2010; Machine Learning Seminar, TU Berlin, 2010; Institute for Computing and Information Sciences Radboud University Nijmegen, 2010; PhD course: Advances in MRI of human brain structure and function, Danish Research Centre for Magnetic Resonance, Hvidovre Hospital, October 2009; TRICAP 2009, Nuria, Spain, 2009; Lawrence Livermore Lab, Berkeley, USA, November 2007; ICIAM, ETH Zürich, Switzerland, July 2007; Sandia National Lab, Livermore, USA August 2006; Seminar at Columbia University, October 2006; TRICAP 2006, Crete, Greece, June 2006; 1st International Summer School in Biomedical Engineering, Erfurt, Germany 2006.
REVIEWING EXPERIENCE	Statistics in Medicine, ISCAS 2007, Computational Intelligence and Neuroscience, EURASIP JASP, IEEE Transactions on Biomedical Engineering, Journal of Neuroscience Methods, Computer Physics Communication, Signal Processing, Journal of Chemometrics, EUSIPCO 2008-2011, Neural Processing Letters, Data Mining and Knowledge Discovery, Machine Learning for Signal Processing (MLSP) 2010-2011, Latent Variable Analysis and Signal Separation (LVA/ICA2010), NeuroImage, The Journal of Neuroscience, Human Brain Mapping (Wiley), Transactions on Pattern Analysis and Machine Intelligence (TPAMI), Neural Computation, International Conference on Acoustics, Speech and Signal Processing (ICASSP2011), Linear Algebra and its Applications, ICANN 2011, MICCAI2011, NeuroComputing, IEEE Transactions on Signal Processing, ICONIP 2011, ICASSP 2012, MLSP 2012, Journal of Selected Topics in Signal Processing, Physics Letters A, TPAMI, Bayesian Analysis.
PEER REVIEWED PUBLICATIONS	16 Journal and 31 conference or workshop papers accumulated. <i>Total of 733 Google Scholar and 265 ISI citations as of October 2012.</i>

Journal Publications

1. M. Mørup, M. N. Schmidt, Bayesian Community Detection, *Neural Computation* vol. 24(9), pp. 2434-56, 2012.
2. M. Mørup, L. K. Hansen, Archetypal Analysis for Machine Learning and Data Mining, accepted for publication *NeuroComputing*, 2011.
3. M. Mørup, Applications of tensor (multi-way array) factorizations and decompositions in data mining, *Wiley DMKD* vol. 1(1), pp. 24-40, 2011.
4. C. Stahlhut, M. Mørup, O. Winther, L. K. Hansen, Simultaneous EEG Source and Forward Model Reconstruction (SOFOMORE) using a Hierarchical Bayesian Approach, *Journal of Signal Processing Systems*, pp. 1-14, 2010.
5. E. Acar, D. M. Dunlavy, T. G. Kolda, M. Mørup, Scalable tensor factorizations for incomplete data, in press *Chemometrics and Intelligent Laboratory Systems* 2010.
6. S. M. Arnfred, M. Mørup, J. Thalbitzera, L. Janssona, J. Parnas, Attenuation of beta and gamma oscillations in schizophrenia spectrum patients following hand posture perturbation, *Psychiatric Research*, vol. 185(1-2), pp. 215-224, 2010.
7. I. Griskova, M. Mørup, Josef Parnas, Osvaldas Ruksenas, Sidse M. Arnfred, Two discrete components of the 20 Hz steady-state response are distinguished through the modulation of activation level. *Clinical Neurophysiology*, vol. 120, pp. 904-909, 2009
8. M. Mørup, L.K. Hansen, Automatic Relevance Determination for multi-way models, *Journal of Chemometrics*, vol. 23(7-8), pp. 352-363, 2009
9. M. Mørup, L.K. Hansen, S.M. Arnfred, L.-H. Lim, K.M. Madsen, Shift Invariant Multilinear Decomposition of Neuroimaging Data. *NeuroImage* vol. 42(4), pp.1439-50, 2008
10. M. Mørup, L. K. Hansen, S. M. Arnfred, Algorithms for Sparse Nonnegative Tucker Decomposition. *Neural Computation*, vol. 20 no. 8, pp. 2112-2131, 2008
11. S. M. Arnfred, L. K. Hansen, J. Parnas, M. Mørup, Regularity increases middle latency evoked and late induced beta brain response following proprioceptive stimulation. *Brain Research*, vol. 1218, pp. 114-131, 2008

Conference and Workshop Proceedings

1. T. Herlau, M. Mørup, M. N. Schmidt, L. K. Hansen, Modelling Dense Relational Data, *Machine Learning for Signal Processing (MLSP)*, 2012 IEEE Workshop on
2. K. W. Andersen, M. Mørup, H. Siebner, K. H. Madsen, L. K. Hansen, Identifying Modular Relations In Complex Brain Networks, *Machine Learning for Signal Processing (MLSP)*, 2012 IEEE Workshop on
3. D. K. Wind, M. Mørup, Link Prediction In Weighted Networks, *Machine Learning for Signal Processing (MLSP)*, 2012 IEEE Workshop on
4. F. K. Glückstad, M. Mørup, Application of the Infinite Relational Model combined with the Bayesian Model of Generalization for Effective Cross-Cultural Knowledge Transfer, *Proceedings of the 26th Annual Conference of the Japanese Society for Artificial Intelligence*, 2012 [bibtex]
5. T. Herlau, M. Mørup, M. N. Schmidt, L. K. Hansen, Detecting Hierarchical Structure in Networks, *Cognitive Information Processing*, 2012
6. R. Tomioka, M. Mørup, A Bayesian Analysis of the Radioactive Releases of Fukushima, in press *AISTATS* 2012.
7. M. Mørup, M.N. Schmidt, Transformation Invariant Sparse Coding, Accepted for publication, *Machine Learning for Signal Processing (MLSP)*, 2011 IEEE Workshop on
8. T.J. Hansen, M. Mørup, L.K. Hansen, Non-Parametric Co-Clustering Of Large Scale Sparse Bipartite Networks On The GPU, *Machine Learning for Signal Processing (MLSP)*, 2011 IEEE Workshop on
9. M. Mørup, K. H. Madsen, L. K. Hansen, Modeling Latency and Shape Changes in Trial Based Neuroimaging Data, Accepted for publication, *ASILOMAR*, 2011
10. M. Mørup, S. Haufe, Frequency Constrained ShifCP Modeling of Neuroimaging Data, Accepted for publication *ASILOMAR*, 2011
11. M. Mørup, K. H. Madsen, A. M. Dogonowski, H. Siebner, L. K. Hansen, Infinite Relational Modeling of Functional Connectivity in Resting State fMRI, *Neural Information Processing Systems* 23, pp. 1750-1758, 2010
12. T. J. Hansen, M. Mørup, L.K. Hansen, Large Scale GPU Based Inference for the Infinite Relational Model. *NIPS workshop on Low-rank Methods for Large-scale Machine Learning*, 2010.
13. M. Mørup, M. N. Schmidt, L. K. Hansen, Infinite Multiple Membership Relational Modeling for Complex Networks, first presented at *NIPS Workshop on Networks Across Disciplines in Theory and Application*, 2010. Accepted for publication, *Machine Learning for Signal Processing (MLSP)*, 2011 IEEE Workshop on
14. M. N. Schmidt, M. Mørup, Infinite non-negative matrix factorization, *European Signal Processing Conference (EUSIPCO)*, pp. 905-909, 2010
15. M. Mørup, L. K. Hansen, Archetypal Analysis for Machine Learning, *Machine Learning for Signal Processing (MLSP)*, 2010 IEEE Workshop on, pp. 172-177, 2010
16. M. K. Petersen, M. Mørup, L. K. Hansen, Latent Semantics As Cognitive Components, *Cognitive Information Processing (CIP)*, 2nd International Workshop on, pp. 434-439, 2010
17. E. Acar, D. Dunlavy, T. G. Kolda, M. Mørup, Scalable Tensor Factorizations with Missing Data, *Proceedings of the 2010 SIAM International Conference on Data Mining*, pp. 701-712, 2010
18. M. K. Petersen, M. Mørup, L. K. Hansen, Sparse but emotional decomposition of lyrics, 3rd International Workshop on Learning Semantics of Audio Signals (LSAS), 2009
19. C. Stahlhut, M. Mørup, O. Winther, L. K. Hansen, Hierarchical Bayesian Model for simultaneous EEG Source and Forward Model Reconstruction (SOFOMORE). *Machine Learning for Signal Processing*, 2009 IEEE Workshop on, pp. 1-6, 2010
20. C. Stahlhut, M. Mørup, O. Winther, L. K. Hansen : Sofomore: Combined EEG Source and Forward Model Reconstruction, *IEEE International Symposium on Biomedical Imaging*, pp. 450-453, 2009
21. M. Mørup, L. K. Hansen, Tuning Pruning in Sparse Non-negative Matrix Factorization. *European Signal Processing Conference (EUSIPCO-2009)*, pp. 1923-1927, 2009
22. M. Mørup, K. H. Madsen, L. K. Hansen, Latent Causal Modelling of Neuroimaging Data, *NIPS Workshop on Connectivity Inference in Neuroimaging* 2009
23. M. Mørup, L. K. Hansen, Learning Latent Structure in Complex Networks, *Workshop on Analyzing Networks and Learning with Graphs NIPS* 2009
24. V. Potluru, S. Plis, M. Mørup, V. Calhoun, T. Lane, Efficient Multiplicative updates for Support Vector Machines. *SIAM International Conference on Data Mining (SDM09)*, pp. 1220-1231, 2009
25. M. Mørup, L.K. Hansen, Sparse Coding and Automatic Relevance Determination for Multi-way models. *Signal Processing with Adaptive Sparse Structured Representations (Spars09)*, 2009
26. M. Mørup, K.H. Madsen, L.K. Hansen, Approximate L0 constrained Non-negative Matrix and Tensor Factorization. *IEEE International Symposium on Circuits and Systems (ISCAS)*, special session on Non-negative Matrix and Tensor Factorization and Related Problems, pp. 1328 - 1331, 2008
27. P. M. Rasmussen, M. Mørup, L. K. Hansen, S. M. Arnfred, Model Order Estimation for Independent Component Analysis of Epoched EEG Signals. *Biosignals 2008, International Conference on Bio-inspired Systems and Signal Processing*, 2008

Editorials

1. A. Chockcki, M. Mørup, P. Smaragdus, W. Wang, and R. Zdunek, Editorial. *Advances in Nonnegative Matrix and Tensor Factorization, Computational Intelligence and Neuroscience*, 2008