

# List of publications

## Refereed journal publications

- [1] Fumiko K. Glückstad, Mikkel N. Schmidt, and Morten Mørup. “Examination of Heterogeneous Societies: Identifying subpopulations by contrasting cultures”. In: *Journal of Cross-Cultural Psychology* 48.1 (2017). DOI: doi: 10.1177/0022022116672346.
- [2] Peter B. Jørgensen, Mikkel N. Schmidt, and Ole Winther. “Deep Generative Models for Molecular Science”. In: *Molecular Informatics* 37.1–2 (Feb. 2017). DOI: 10.1002/minf.201700133.
- [3] Søren Føns Vind Nielsen, Mikkel N. Schmidt, Kristoffer Hougaard Madsen, and Morten Mørup. “Predictive assessment of models for dynamic functional connectivity”. In: *NeuroImage* (2017). DOI: 10.1016/j.neuroimage.2017.12.084.
- [4] Rasmus E. Røge, Kristoffer H. Madsen, Mikkel N. Schmidt, and Morten Mørup. “Infinite von Mises-Fisher mixture modeling of whole-brain fMRI data”. In: *Neural Computation* 29.10 (Oct. 2017), pp. 2712–2741. DOI: 10.1162/neco\_a\_01000.
- [5] Kasper B. Frøhling, Tommy S. Alstrøm, Michael Bache, Michael S. Schmidt, Mikkel N. Schmidt, Jan larsen, Mogens H. Jakobsen, and Anja Boisen. “Surface-enhanced Raman spectroscopic study of DNA and 6-mercapto-1-hexanol interactions using large area mapping”. In: *Vibrational Spectroscopy* 86 (Sept. 2016), pp. 331–336. DOI: doi:10.1016/j.vibspec.2016.08.005.
- [6] Kasper Winther Andersen, Kristoffer H. Madsen, Hartwig Roman Siebner, Mikkel N. Schmidt, Morten Mørup, and Lars Kai Hansen. “Non-parametric Bayesian graph models reveal community structure in resting state fMRI”. In: *NeuroImage* (2014), pp. 301–15. DOI: 10.1016/j.neuroimage.2014.05.083.
- [7] Fumiko K. Glückstad, Tue Herlau, Mikkel N. Schmidt, and Morten Mørup. “Cross-categorization of legal concepts across boundaries of legal systems”. In: *Artificial Intelligence and Law* (2014). DOI: 10.1007/s10506-013-9150-2.
- [8] Tue Herlau, Mikkel N. Schmidt, and Morten Mørup. “Infinite-degree-corrected stochastic block model”. In: *Physical Review E* 90.032819 (2014). DOI: 10.1103/PhysRevE.90.032819.
- [9] Mikkel N. Schmidt and Morten Mørup. “Non-parametric Bayesian modeling of complex networks. An introduction”. In: *IEEE Signal Processing Magazine* 30.3 (May 2013), pp. 110–128. DOI: 10.1109/MSP.2012.2235191.
- [10] Darko Zibar, Ole Winther, Niccolo Franceschi, Robert Borkowski, Antonio Caballero, Valeria Arlunno, Mikkel N. Schmidt, Neil Guerrero Gonzales, Bangning Mao, Yabin Ye, Knud J. Larsen, and Idelfonso Tafur Monroy. “Nonlinear impairment compensation using expectation maximization for dispersion managed and unmanaged PDM 16-QAM transmission”. In: *Optics Express* 20.26 (2013), B181–B196. DOI: 10.1364/OE.20.00B181.
- [11] Morten Mørup and Mikkel N. Schmidt. “Bayesian community detection”. In: *Neural Computation* 24.9 (2012), pp. 2434–56. DOI: 10.1162/NECO\_a\_00314.
- [12] Morten Arngren, Mikkel N. Schmidt, and Jan Larsen. “Unmixing of hyperspectral images using Bayesian nonnegative matrix factorization with volume prior”. In: *Journal of Signal Processing Systems* 65.3 (2010), pp. 479–496. DOI: 10.1007/s11265-010-0533-2.
- [13] Mikkel N. Schmidt and Hans Laurberg. “Non-negative matrix factorization with Gaussian process priors”. In: *Computational Intelligence and Neuroscience* (2008). DOI: 10.1155/\2008/361705.

## Refereed conference publications

- [14] Tommy S. Alstrøm, Mikkel N. Schmidt, Tomas Rindzevicius, Anja Boisen, and Jan Larsen. “A pseudo-Voigt component model for high-resolution recovery of constituent spectra in raman spectroscopy”. In: *Acoustics, speech and signal processing, IEEE international conference on (ICASSP)*. 2017. DOI: 10.1109/ICASSP.2017.7952570.
- [15] Rasmus Bonnevie, Morten Mørup, and Mikkel N. Schmidt. “Difference-Of-Convex Optimization For Variational KL-Corrected Inference In Dirichlet Process Mixtures”. In: *Machine Learning for Signal Processing, IEEE International Workshop on, (MLSP)*. 2017.
- [16] Jesper L. Hinrich, Søren F. V. Nielsen, Nicolai A. B. Riis, Casper T. Eriksen, Jacob Frøsig, Marco D. F. Kristensen, Mikkel N. Schmidt, Kristoffer H. Madsen, and Morten Mørup. “Scalable group level probabilistic sparse factor analysis”. In: *Acoustics, speech and signal processing, IEEE international conference on (ICASSP)*. 2017. DOI: 10.1109/ICASSP.2017.7952570.
- [17] Søren F. V. Nielsen, Kristoffer H. Madsen, Mikkel N. Schmidt, and Morten Mørup. “Modeling dynamic functional connectivity using a wishart mixture model”. In: *Pattern Recognition in NeuroImaging (PRNI)*. 2017. DOI: 10.1109/PRNI.2017.7981505.
- [18] Rasmus Røge, Karen Sandø Ambrosen, Kristoffer Jon Albers, Casper Tabassum Eriksen, Matthew George Lip-trot, Mikkel N. Schmidt, Kristoffer Hougaard Madsen, and Morten Mørup. “Whole brain functional connectivity predicted by indirect structural connections”. In: *Pattern Recognition in NeuroImaging (PRNI)*. 2017. DOI: 10.1109/PRNI.2017.7981496.
- [19] Kristoffer J. Albers, Morten Mørup, and Mikkel N. Schmidt. “The influence of hyper-parameters in the infinite relational model”. In: *Machine Learning for Signal Processing, IEEE International Workshop on, (MLSP)*. 2016. DOI: 10.1109/MLSP.2016.7738908.

- [20] Tue Herlau, Mikkel N. Schmidt, and Morten Mørup. “Completely random measures for modelling block-structured sparse networks”. In: *Advances in neural information processing (NIPS)*. 2016.
- [21] Philip H. Jørgensen, Morten Mørup, Mikkel N. Schmidt, and Tue Herlau. “Bayesian latent feature modeling for modeling bipartite networks with overlapping groups”. In: *Machine Learning for Signal Processing, IEEE International Workshop on, (MLSP)*. 2016. DOI: 10.1109/MLSP.2016.7738845.
- [22] Rasmus E. Røge, Kristoffer H. Madsen, Mikkel N. Schmidt, and Morten Mørup. “Unsupervised segmentation of task activated regions in FMRI”. In: *Machine Learning for Signal Processing, IEEE International Workshop on, (MLSP)*. 2015. DOI: 10.1109/MLSP.2015.7324384.
- [23] Mikkel N. Schmidt and Kristoffer Jon Albers. “Numerical approximations for speeding up MCMC inference in the infinite relational model”. In: *European Signal Processing Conference (EUSIPCO)*. 2015. DOI: 10.1109/EUSIPCO.2015.7362891.
- [24] Tommy S. Alstrøm, Kasper B. Frøhling, Jan Larsen, Mikkel N. Schmidt, Michael Bache, Michael S. Schmidt, Mogens H. Jakobsen, and Anja Boisen. “Improving the Robustness of Surface Enhanced Raman Spectroscopy based Sensors by Bayesian Non-negative Matrix Factorization”. In: *Machine Learning for Signal Processing, IEEE International Workshop on, (MLSP)*. 2014. DOI: 10.1109/MLSP.2014.6958925.
- [25] Karen Sandø Ambrosen, Kristoffer Jon Albers, Tim Dyrby, Mikkel N. Schmidt, and Morten Mørup. “Nonparametric Bayesian Clustering of Structural Whole Brain Connectivity in Full Resolution”. In: *Pattern Recognition in NeuroImaging (PRNI)*. 2014. DOI: 10.1109/PRNI.2014.6858507.
- [26] Morten Mørup, Fumiko K. Glückstad, Tue Herlau, and Mikkel N. Schmidt. “Nonparametric Statistical Structuring of Knowledge Systems using Binary Feature Matches”. In: *Machine Learning for Signal Processing, IEEE International Workshop on, (MLSP)*. 2014. DOI: 10.1109/MLSP.2014.6958905.
- [27] Mikkel N. Schmidt, Tue Herlau, and Morten Mørup. “Discovering hierarchical structure in normal relational data”. In: *Cognitive Information Processing (CIP)*. 2014. DOI: 10.1109/CIP.2014.6844498.
- [28] Kristoffer Jon Albers, Andreas Leon Aagaard Moth, Morten Mørup, and Mikkel N. Schmidt. “Large scale inference in the infinite relational model: Gibbs sampling is not enough”. In: *Machine Learning for Signal Processing, IEEE International Workshop on (MLSP)*. 2013. DOI: 10.1109/MLSP.2013.6661904.
- [29] Karen Sandø Ambrosen, Tue Herlau, Tim Dyrby, Mikkel N. Schmidt, and Morten Mørup. “Comparing Structural Brain Connectivity by the Infinite Relational Model”. In: *Pattern Recognition in NeuroImaging (PRNI)*. 2013, pp. 50–53. DOI: 10.1109/PRNI.2013.22.
- [30] Fumiko K. Glückstad, Tue Herlau, Mikkel N. Schmidt, and Morten Mørup. “Analysis of Conceptualization Patterns across Groups of People”. In: *Technologies and Applications of Artificial Intelligence, Conference on (TAAI)*. 2013. DOI: 10.1109/TAAI.2013.75.
- [31] Fumiko K. Glückstad, Tue Herlau, Mikkel N. Schmidt, and Morten Mørup. “Analysis of Subjective Conceptualizations Towards Collective Conceptual Modelling”. In: *Japanese Society for Artificial Intelligence, Conference of the (JSAI)*. 2013.
- [32] Fumiko K. Glückstad, Tue Herlau, Mikkel N. Schmidt, and Morten Mørup. “Unsupervised Knowledge Structuring: Application of Infinite Relational Models to the FCA Visualization”. In: *Signal Image Technology and Internet based Systems, International Conference on (SITIS)*. 2013, pp. 233–40. DOI: 10.1109/SITIS.2013.48.
- [33] Tue Herlau, Morten Mørup, and Mikkel N. Schmidt. “Modeling Temporal Evolution and Multiscale Structure in Networks”, Machine Learning, International Conference on (ICML)”. In: ed. by Sanjoy Dasgupta and David McAllester. Vol. 28. Proceedings of Machine Learning Research 3. Atlanta, Georgia, USA: PMLR, 17–19 Jun 2013, pp. 960–968.
- [34] Tommy S. Alstrøm, Bjørn S. Jensen, Mikkel N. Schmidt, Natalie V. Kostesha, and Jan Larsen. “Hausdorff and Hellinger for colorimetric sensor array classification”. In: *Machine Learning for Signal Processing, IEEE International Workshop on (MLSP)*. 2012. DOI: 10.1109/MLSP.2012.6349724.
- [35] Tue Herlau, Morten Mørup, Mikkel N. Schmidt, and Lars Kai Hansen. “Detecting hierarchical structure in networks”. In: *Cognitive Information Processing (CIP)*. 2012. DOI: 10.1109/CIP.2012.6232913.
- [36] Tue Herlau, Morten Mørup, Mikkel N. Schmidt, and Lars Kai Hansen. “Modeling dense relational data”. In: *Machine Learning for Signal Processing, IEEE International Workshop on (MLSP)*. 2012. DOI: 10.1109/MLSP.2012.6349747.
- [37] Mikkel N. Schmidt, Stephen Schwartz, and Jan Larsen. “Interactive 3D audio: Enhancing awareness of details in immersive soundscapes?” In: *133rd Convention of the Audio Engineering Society*. 2012.
- [38] Darko Zibar, Ole Winther, iccolo Franceschi, Robert Borkowski, tonio Caballero, Mikkel N. Schmidt Valeria Arlunno, eil Guerrero Gonzales, Bangning Mao, Knud J. Larsen, and Idelfonso Tafur Monroy. “Nonlinear Impairment Compensation Using Expectation Maximization for PDM 16-QAM Systems”. In: *European Conference on Optical Communications (ECOC)*. 2012. DOI: 10.1364/OE.20.00B18.
- [39] Morten Mørup and Mikkel N. Schmidt. “Transformation invariant sparse coding”. In: *Machine Learning for Signal Processing, IEEE International Workshop on (MLSP)*. 2011. DOI: 10.1109/MLSP.2011.6064547.

- [40] Morten Mørup, Mikkel N. Schmidt, and Lars Kai Hansen. “Infinite multiple membership relational modeling for complex networks”. In: *Machine Learning for Signal Processing, IEEE International Workshop on (MLSP)*. 2011. DOI: 10.1109/MLSP.2011.6064546.
- [41] Mikkel N. Schmidt and Morten Mørup. “Infinite non-negative matrix factorization”. In: *European Signal Processing Conference (EUSIPCO)*. 2010.
- [42] Morten Arngren, Mikkel N. Schmidt, and Jan Larsen. “Bayesian nonnegative matrix factorization with volume prior for unmixing of hyperspectral images”. In: *Machine Learning for Signal Processing, IEEE Workshop on (MLSP)*. 2009. DOI: 10.1109/MLSP.2009.5306262.
- [43] Mikkel N. Schmidt. “Function factorization using warped Gaussian processes”. In: *Machine Learning, International Conference on (ICML)*. 2009.
- [44] Mikkel N. Schmidt. “Linearly constrained matrix factorization for blind source separation”. In: *Advances in neural information processing (NIPS)*. 2009.
- [45] Mikkel N. Schmidt and Shakir Mohamed. “Probabilistic non-negative tensor factorization using Markov chain Monte Carlo”. In: *European Signal Processing Conference (EUSIPCO)*. 2009.
- [46] Mikkel N. Schmidt, Ole Winther, and Lars Kai Hansen. “Bayesian non-negative matrix factorization”. In: *Independent Component Analysis and Signal Separation, International Conference on (ICA), Springer Lecture Notes in Computer Science, Vol. 5441*. 2009, pp. 540–547. DOI: 10.1007/978-3-642-00599-2\_68.
- [47] Hans Laurberg, Mikkel N. Schmidt, Mads G. Christensen, and Søren H. Jensen. “Structured non-negative matrix factorization with sparsity patterns”. In: *Signals, Systems and Computers, Asilomar Conference on*. 2008. DOI: 10.1109/ACSSC.2008.5074714.
- [48] Mikkel N. Schmidt and Jan Larsen. “Reduction of Non-stationary Noise using a Non-negative Latent Variable Decomposition”. In: *Machine Learning for Signal Processing, IEEE Workshop on (MLSP)*. 2008, pp. 486–491. DOI: 10.1109/MLSP.2008.4685528.
- [49] Mikkel N. Schmidt, Jan Larsen, and Fu-Tien Hsiao. “Wind Noise Reduction using Non-negative Sparse Coding”. In: *Machine Learning for Signal Processing, IEEE International Workshop on, (MLSP)*. 2007, pp. 431–436. DOI: 10.1109/MLSP.2007.4414345.
- [50] Mikkel N. Schmidt and Rasmus K. Olsson. “Linear Regression on Sparse Features for Single-Channel Speech Separation”. In: *Applications of Signal Processing to Audio and Acoustics, IEEE Workshop on (WASPAA)*. 2007, pp. 26–29. DOI: 10.1109/ASPAA.2007.4393010.
- [51] Mikkel N. Schmidt and Morten Mørup. “Non-negative Matrix Factor 2-D Deconvolution for Blind Single Channel Source Separation”. In: *Independent Component Analysis, International Conference on (ICA), Springer Lecture Notes in Computer Science, Vol.3889*. 2006, pp. 700–707. DOI: 10.1007/11679363\_87.
- [52] Mikkel N. Schmidt and Rasmus K. Olsson. “Single-Channel Speech Separation using Sparse Non-Negative Matrix Factorization”. In: *International Conference on Spoken Language Processing, (Interspeech)*. 2006, pp. 1652–55.

#### Refereed abstracts and workshop contributions

- [53] Kasper B. Frøhling, Tommy S. Alstrøm, Michael Bache, Michael S. Schmidt, Mikkel N. Schmidt, Jan larsen, Mogens H. Jakobsen, and Anja Boisen. “Statistical analysis of large areas of Raman mapped DNA functionalized gold coated silicon nanopillar SERS substrates”. In: *Advanced Vibrational Spectroscopy, International Conference on (ICAVS)*. 2015.
- [54] Søren Føns Vind Nielsen, Kristoffer Hougaard Madsen, Rasmus Røge, Mikkel N. Schmidt, and Morten Mørup. “Nonparametric modeling of dynamic functional connectivity in fMRI data”. In: *Machine Learning and Interpretation in Neuroimaging, NIPS Workshop on (MLINI)*. 2015.
- [55] Kasper Winther Andersen, Kristoffer H. Madsen, Hartwig Roman Siebner, Mikkel N. Schmidt, Morten Mørup, and Lars Kai Hansen. “Community structure in resting state complex networks”. In: *Human Brain Mapping*. 2014.
- [56] Tue Herlau, Morten Mørup, and Mikkel N. Schmidt. “Temporally Evolving Hierarchies in Networks”. In: *NetSci*. 2013.
- [57] Kasper Winther Andersen, Tue Herlau, Morten Mørup, Mikkel N. Schmidt, Mark Lyksborg Kristoffer H. Madsen, Tim Dyrby, Hartwig Siebner, and Lars Kai Hansen. “Joint Modelling of Structural and Functional Brain Networks”. In: *NIPS workshop on Machine Learning and Interpretation in Neuroimaging*. 2012.
- [58] Sune Lehmann, Morten Mørup, and Mikkel N. Schmidt. “A Bayesian Generative Model for Pervasive Overlap”. In: *NetSci*. 2012.
- [59] Morten Mørup and Mikkel N. Schmidt. “Efficient inference in the infinite multiple membership relational model”. In: *NIPS workshop on Bayesian nonparametric: Hope or hype*. 2011.
- [60] Mikkel N. Schmidt, Morten Mørup, and Tue Herlau. “Hierarchical models of complex networks”. In: *NIPS workshop on Bayesian nonparametric: Hope or hype*. 2011.
- [61] Morten Mørup, Mikkel N. Schmidt, and Lars Kai Hansen. “Infinite multiple membership relational modeling for complex networks”. In: *NIPS workshop on Networks across disciplines in theory and applications*. 2010.
- [62] Mikkel N. Schmidt and Morten Mørup. “Reversible jump MCMC for Bayesian NMF”. In: *NIPS workshop on Monte Carlo methods for Bayesian inference in modern day applications*. 2010.

## Theses

- [63] Mikkel N. Schmidt. “Single-channel source separation using non-negative matrix factorization”. PhD thesis. Technical University of Denmark, 2008.
- [64] Mikkel N. Schmidt and Jens Seiersen. “Perceptual unitary ESPRIT algorithm”. MA thesis. Aalborg University, 2003.

## Technical reports

- [65] Morten Mørup and Mikkel N. Schmidt. “Sparse Non-negative Matrix Factor 2-D Deconvolution”.
- [66] Morten Mørup and Mikkel N. Schmidt. “Sparse Non-negative Tensor 2D Deconvolution (SNTF2D) for multi channel time-frequency analysis”.
- [67] Mikkel N. Schmidt. “Speech Separation using Non-negative Features and Sparse Non-negative Matrix Factorization 2007”.
- [68] Mikkel N. Schmidt and Morten Mørup. “Sparse Non-negative Matrix Factor 2-D Deconvolution for Automatic Transcription of Polyphonic Music”.
- [69] Mikkel N. Schmidt and Rasmus K. Olsson. “Feature Space Reconstruction for Single-Channel Speech Separation”.

## Publications in preparation

- [70] Tue Herlau, Morten Mørup, Yee Whye Teh, and Mikkel N. Schmidt. “Adaptive Reconfiguration Moves for Efficient Markov Chain Sampling”. In preparation.
- [71] Tue Herlau, Mikkel N. Schmidt, and Morten Mørup. “Bayesian Dropout”. In preparation.
- [72] Mikkel N. Schmidt, Morten Mørup, and Tue Herlau. “A unifying view on information theoretic and Bayesian models for community structure in complex networks”. In preparation.
- [73] Mikkel N. Schmidt, Morten Mørup, and Tue Herlau. “Nonparametric Bayesian models of hierarchical structure in complex networks”. In preparation.
- [74] Mette Helene Toft, Rasmus Grønbek Haahr, Sune Dunn, Nanna Gulstad, Mikkel N. Schmidt, Erik Vilain Thomsen, Jan Larsen, and Bo Belhage. “Monitoring respiratory rate using reflectance photoplethysmography at the sternum”. In preparation.