

Lucas Theis

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Education

2011 - 2015 Neural Information Processing, PhD (*summa cum laude*)
University of Tübingen, International Max Planck Research School
Advisor: Matthias Bethge

2007 - 2010 Cognitive Science, BSc (final grade: 1.0)
University of Osnabrück

1997 - 2006 Abitur
Bergstadt Gymnasium Lüdenscheid

Employment and Internships

06/2016 - present Machine Learning Researcher at Twitter Cortex
Twitter, London

01/2016 - 06/2016 Machine Learning Researcher
Magic Pony Technology, London

07/2014 - 10/2014 Internship in the Creative Technologies Lab
Adobe Systems, San Francisco
Supervisor: Matthew Hoffman

05/2010 - 04/2011 Internship in the Computational Vision and Neuroscience Group
08/2008 - 09/2008 *Max Planck Institute for Biological Cybernetics, Tübingen*
02/2008 - 03/2008 Host: Matthias Bethge

08/2009 - 12/2009 Internship in the Vision, Dynamics and Learning Lab
Johns Hopkins University, Baltimore
Host: René Vidal

Summer Schools

- 07/2012 Deep Learning, Feature Learning Summer School
Institute for Pure & Applied Mathematics, UCLA
- 06/2011 Machine Learning Summer School (MLSS)
NUS, Singapore

Scholarships

- 2009 RISE scholarship for a research project at the Johns Hopkins University
issued by the German Academic Exchange Foundation (DAAD)
- 2011 DFG stipend within the “Fast-Track” doctoral program at the
Werner Reichardt Centre for Integrative Neuroscience Tübingen

Publications

- L. Theis, A. van den Oord, and M. Bethge
A note on the evaluation of generative models
International Conference on Learning Representations, 2016 (PDF)
- L. Theis, P. Berens, E. Froudarakis, J. Reimer, M. Roman-Roson, T. Baden, T. Euler, A. S. Tolias, *et al.*
Benchmarking spike rate inference in population calcium imaging
Neuron, 2016 (PDF)
- L. Theis and M. Bethge
Generative Image Modeling Using Spatial LSTMs
Advances in Neural Information Processing Systems 25, 2015 (PDF)
- L. Theis and M. D. Hoffman
A trust-region method for stochastic variational inference with applications to streaming data
International Conference on Machine Learning, 2015 (PDF)
- M. Kümmerer, L. Theis, and M. Bethge
Deep Gaze I: Boosting Saliency Prediction with Feature Maps Trained on ImageNet
ICLR workshop, 2015 (PDF)
- S. Sra, R. Hosseini, L. Theis, and M. Bethge
Statistical inference with the elliptical gamma distribution
Artificial Intelligence and Statistics, 2015
- H. Gerhard, L. Theis, and M. Bethge
Modeling Natural Image Statistics
Biologically-inspired Computer Vision, Wiley VCH, 2015 (PDF)
- A. Chagas, L. Theis, B. Sengupta, M. Stüttgen, M. Bethge, and C. Schwarz
Functional analysis of ultra high information rates conveyed by rat vibrissal primary afferents
Frontiers in Neural Circuits, 2013 (PDF)
- L. Theis, A. M. Chagas, D. Arnstein, C. Schwarz, and M. Bethge
Beyond GLMs: A Generative Mixture Modeling Approach to Neural System Identification

PLoS Computational Biology, 2013 ([PDF](#))

L. Theis, J. Sohl-Dickstein, M. Bethge

Training sparse natural image models with a fast Gibbs sampler of an extended state space
Advances in Neural Information Processing Systems 25, 2012 ([PDF](#)) ([Poster](#))

L. Theis, R. Hosseini, M. Bethge

Mixtures of conditional Gaussian scale mixtures applied to multiscale image representations
PLoS ONE, 2012 ([PDF](#)) ([Poster](#))

L. Theis, S. Gerwinn, F. Sinz, and M. Bethge

In All Likelihood, Deep Belief Is Not Enough
Journal of Machine Learning Research, 2011 ([PDF](#))

Teaching

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|-------------------|---|
| 10/2013 - 01/2014 | Lecturer, “Essential Mathematics”
<i>University of Tübingen, International Max Planck Research School</i> |
| 10/2012 - 01/2013 | Lecturer, “Essential Mathematics”
<i>University of Tübingen, International Max Planck Research School</i> |
| 04/2009 - 07/2009 | Teaching assistant, “Perception and Action”
<i>University of Osnabrück, Lecturer: Prof. Dr. Frank Pasemann</i> |
| 11/2008 - 02/2009 | Tutor, “Introduction to Logic”
<i>University of Osnabrück, Lecturer: Prof. Dr. Sven Walter</i> |

Talks

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| 05/2016 | A note on the evaluation of generative models
<i>International Conference on Learning Representations</i>
<i>San Juan, Puerto Rico</i> |
| 09/2014 | Nonlinear approaches to neural system identification
<i>Workshop on “Statistical Challenges in Neuroscience”</i>
<i>University of Warwick, Coventry</i> |
| 09/2013 | Beyond GLMs: A Generative Mixture Modeling Approach to Neural System Identification
<i>Workshop on “Recent Advances in Neural Response Modeling”</i>
<i>Bernstein Conference 2013, Tübingen</i> |
| 08/2012 | Hierarchical models of natural images
<i>Stanford University</i>
Host: Surya Ganguli |
| 07/2012 | Hierarchical models of natural images
<i>Redwood Center for Theoretical Neuroscience, Berkeley</i>
Host: Bruno Olshausen |

Programming Skills

Primary languages	Python, C++, MATLAB, \LaTeX
Familiar languages	Mathematica, Java, Delphi, CUDA, Qt4, PHP, XHTML, Javascript, SQL, Prolog, Assembler
Github	https://github.com/lucastheis