

## Education

- 2011 - 2015      **Neural Information Processing, PhD** (summa cum laude)  
*University of Tübingen, International Max Planck Research School*  
Title: *Advances in Probabilistic Modeling of Natural Images*  
Advisor: Matthias Bethge
- 2007 - 2010      **Cognitive Science, BSc** (final grade: 1.0)  
*University of Osnabrück*  
Title: *On Likelihood Estimation in Deep Belief Networks*

## Employment and Internships

- 06/2016 - present      **Senior Machine Learning Researcher**  
*Twitter Cortex, London*
- 01/2016 - 06/2016      **Machine Learning Researcher**  
*Magic Pony Technology, London*
- 07/2014 - 10/2014      **Internship**  
*Creative Technologies Lab, Adobe Systems, San Francisco*  
Supervisor: Matthew Hoffman
- 05/2010 - 04/2011      **Internship**  
*Max Planck Institute for Biological Cybernetics, Tübingen*  
08/2008 - 09/2008      *Max Planck Institute for Biological Cybernetics, Tübingen*  
02/2008 - 03/2008      Host: Matthias Bethge
- 08/2009 - 12/2009      **Internship**  
*Vision, Dynamics and Learning Lab, Johns Hopkins University, Baltimore*  
Host: René Vidal

## Publications

- L. Theis, I. Korshunova, A. Tejani, and F. Huszár  
**Faster gaze prediction with dense networks and Fisher pruning**  
*arXiv:1801.05787, 2018* ([PDF](#), [Blog](#))
- K. Storrs, S. V. Leuven, S. Kojder, L. Theis, and F. Huszár  
**Adaptive Paired-Comparison Method for Subjective Video Quality Assessment on Mobile Devices**  
*Picture Coding Symposium, 2018* ([PDF](#), [Blog](#))
- C. Ledig, L. Theis, F. Huszár, J. Caballero, A. Aitken, A. Tejani, et al.  
**Photo-Realistic Single Image Super-Resolution Using a Generative Adversarial Network**  
*Computer Vision and Pattern Recognition, 2017* ([PDF](#))
- L. Theis, W. Shi, A. Cunningham, and F. Huszár  
**Lossy Image Compression with Compressive Autoencoders**  
*International Conference on Learning Representations, 2017* ([PDF](#), [Poster](#), [Article](#))
- I. Korshunova, W. Shi, J. Dambre, and L. Theis  
**Fast Face-swap Using Convolutional Neural Networks**

*International Conference on Computer Vision, 2017* ([PDF](#))

- C. Sønderby, J. Caballero, L. Theis, W. Shi, and F. Huszár  
**Amortised MAP Inference for Image Super-resolution**  
*International Conference on Learning Representations, 2017* ([PDF](#))
- 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](#))

## Patents

- Z. Wang, R. D. Bishop, F. Huszár, and L. Theis  
**Training end-to-end video processes**  
*US Patent App. 15/707,294, 2018*

W. Shi, C. Ledig, Z. Wang, L. Theis, and F. Huszár  
**Super-resolution using a generative adversarial network**  
*US Patent App. 15/856,759, 2018*

L. Theis, Z. Wang, and R. D. Bishop  
**Multiscale 3D texture synthesis**  
*US Patent App. 15/856,759, 2018*

## Talks

- 10/2017      **Evaluating Generative Models**  
*ICCV Tutorial on GANs, Venice*
- 08/2017      **Compressing Images with Neural Networks**  
*Creative AI meetup, London*
- 05/2016      **A note on the evaluation of generative models**  
*International Conference on Learning Representations  
San Juan, Puerto Rico*
- 09/2014      **Nonlinear approaches to neural system identification**  
*Workshop on "Statistical Challenges in Neuroscience"  
University of Warwick, Coventry*
- 09/2013      **Beyond GLMs: A Generative Mixture Modeling Approach to Neural System Identification**  
*Workshop on "Recent Advances in Neural Response Modeling"  
Bernstein Conference 2013, Tübingen*
- 08/2012      **Hierarchical models of natural images**  
*Stanford University  
Host: Surya Ganguli*
- 07/2012      **Hierarchical models of natural images**  
*Redwood Center for Theoretical Neuroscience, Berkeley  
Host: Bruno Olshausen*

## Workshops Organized

- 6/2019      Workshop and Challenge on Learned Image Compression (CLIC2019)  
*Computer Vision and Pattern Recognition, Long Beach*
- 6/2018      Workshop and Challenge on Learned Image Compression (CLIC2018)  
*Computer Vision and Pattern Recognition, Salt Lake City*
- 4/2018      Goals and Principles of Representation Learning  
*Data, Learning, and Inference (DALI), Lanzarote*

## Teaching

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

## 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