

Stephan Mandt

Assistant Professor of Computer Science

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Work Experience

- 2018–present **Assistant Professor of Computer Science, University of California, Irvine**
Donald Bren School of Information and Computer Sciences
- 2020–present **Assistant Professor of Statistics (by courtesy), UC Irvine**
- summer 2019 **Visiting Researcher, Google Brain**
Conducted research on Bayesian Deep Learning
- 2018 **Senior Research Scientist, Disney Research**
Head of Machine Learning Group
- 2016–2017 **Research Scientist, Disney Research**
Lead Disney Research Pittsburgh’s machine learning research group
- 2014–2016 **Postdoctoral Researcher, Columbia University**
Conducted research on machine learning, advised by David Blei
- 2012–2014 **Postdoctoral Fellow, Princeton University**
Conducted research on probabilistic modeling and statistical physics
- 2012 **Intern, Deutsche Bank**
Developed tools and analytics for an interest rates trading desk

Education

- 2008–2012 **University of Cologne, Ph.D., Magna Cum Laude**
Theoretical Physics, GPA 4.3/4.0
German National Merit Scholarship (Studienstiftung des deutschen Volkes)
Thesis: “Transport and Non-Equilibrium Dynamics in Optical Lattices”
- 2002–2008 **University of Cologne, M.S. and B.S. in Physics, Valedictorian**
German Diplom degree with highest possible GPA (‘with distinction’)
Thesis: “Superbosonization of Invariant Random Matrix Ensembles”

Honors and Awards

- 2019 Kavli Fellow, Frontiers of Science Program, National Academy of Sciences
- 2019 Best Student Paper Award, Symposium on Advances in Approximate Bayesian Inference
- 2018 Disney Inventor Award
- 2016 Best Poster Award, New York Academy of Sciences ML Symposium
- 2012 PCCM Fellow, Princeton University
- 2010 German National Merit Scholarship (granted to < 0.5% of students in Germany)

Publications

Peer-Reviewed Conference Papers

- C29 Y. Yang, R. Bamler, and **S. Mandt**. Improving Inference for Neural Image Compression. In *Neural Information Processing Systems (NeurIPS)*, 2020.

- C28 A. Boyd, R. Bamler, **S. Mandt**, and P. Smyth. User-Dependent Neural Sequence Models for Continuous-Time Event Data. In *Neural Information Processing Systems (NeurIPS)*, 2020.
- C27 G. Mooers, J. Tuyls, **S. Mandt**, M. Pritchard, and T. Beucler. Generative Modeling for Atmospheric Convection. In *International Conference on Climate Informatics (CI)*, 2020.
- C26 Y. Yang, R. Bamler, and **S. Mandt**. Variational Bayesian Quantization. In *International Conference on Machine Learning (ICML)*, 2020.
- C25 F. Wenzel, K. Roth, B. Veeling, J. Swiatkowski, L. Tran, **S. Mandt**, J. Snoek, T. Salimans, R. Jenatton, and S. Nowozin. How Good is the Bayes Posterior in Deep Neural Networks Really?. In *International Conference on Machine Learning (ICML)*, 2020.
- C24 J. Swiatkowski, K. Roth, B. Veeling, L. Tran, J. Dillon, **S. Mandt**, J. Snoek, T. Salimans, R. Jenatton, and S. Nowozin. The k-tied Normal Distribution: A Compact Parameterization of Gaussian Mean Field Posteriors in Bayesian Neural Networks. In *International Conference on Machine Learning (ICML)*, 2020.
- C23 V. Fortuin, D. Baranchuk, G. Rätsch, and **S. Mandt**. GP-VAE: Deep Probabilistic Time Series Imputation. In *Artificial Intelligence and Statistics (AISTATS)*, 2020.
- C22 R. Bamler and **S. Mandt**. Extreme Classification via Adversarial Softmax Approximation. In *International Conference on Learning Representations (ICLR)*, 2020.
- C21 J. Han, S. Lombardo, C. Schroers, and **S. Mandt**. Deep Generative Video Compression. In *Neural Information Processing Systems (NeurIPS)*, 2019.
- C20 F. Schmidt, **S. Mandt**, and T. Hofmann. Autoregressive Text Generation Beyond Feedback Loops. In *Conference on Empirical Methods in Natural Language Processing (EMNLP)*, 2019.
- C19 R. Bamler, F. Salehi, and **S. Mandt**. Augmenting and Tuning Knowledge Graph Embeddings. In *Uncertainty in Artificial Intelligence (UAI)*, 2019.
- C18 M. Helou, **S. Mandt**, A. Krause, and P. Beardsley. Mobile Robotic Painting of Texture. In *International Conference on Robotics and Automation (ICRA)*, 2019.
- C17 C. Zhang, C. Ötzireli, **S. Mandt**, and G. Salvi. Active Mini-Batch Sampling using Repulsive Point Processes. In *Thirty-Third AAAI Conference on Artificial Intelligence*, pp. 5741-5748 (AAAI), 2019.
- C16 A. Buchholz, F. Wenzel, and **S. Mandt**. Quasi Monte Carlo Variational Inference. In *International Conference on Machine Learning (ICML)*, 2018.
- C15 J. Marino, Y. Yue, and **S. Mandt**. Iterative Amortized Inference. In *International Conference on Machine Learning (ICML)*, 2018.
- C14 R. Bamler and **S. Mandt**. Improving Optimization for Models with Continuous Symmetry Breaking. In *International Conference on Machine Learning (ICML)*, 2018.
- C13 Y. Li and **S. Mandt**. Disentangled Sequential Autoencoder. In *International Conference on Machine Learning (ICML)*, 2018.
- C12 T. Fu, C. Zhang, and **S. Mandt**. Continuous Word Embedding Fusion via Spectral Decomposition. In *Conference on Computational Natural Language Learning (CoNLL)*, 2018.
- C11 L. Deecke, R. Vandermeulen, L. Ruff, **S. Mandt**, and M. Kloft. Image Anomaly Detection with Generative Adversarial Networks. In *European Conference on Machine Learning (ECML)*, 2018.
- C10 P. Jähnichen, F. Wenzel, M. Kloft, and **S. Mandt**. Scalable Generalized Dynamic Topic Models. In *Artificial Intelligence and Statistics (AISTATS)*, 2018.
- C9 C. Zhang, R. Bamler, M. Opper, and **S. Mandt**. Perturbative Black Box Variational Inference. In *Neural Information Processing Systems (NIPS)*, 2017.
- C8 R. Bamler and **S. Mandt**. Dynamic Word Embeddings. In *International Conference on Machine Learning (ICML)*, 2017.
- C7 C. Zhang, H. Kjellström, and **S. Mandt**. Determinantal Point Processes for Mini-Batch Diversification. In *Uncertainty in Artificial Intelligence (UAI)*, 2017.

- C6 Z. Deng, R. Navarathna, P. Carr, **S. Mandt**, Y. Yue, I. Matthews, and G. Mori. Factorized Variational Autoencoders for Modeling Audience Reactions to Movies. In *Computer Vision and Pattern Recognition (CVPR)*, 2017.
- C5 M. Rudolph, F. Ruiz, **S. Mandt**, and D. Blei. Exponential Family Embeddings. In *Neural Information Processing Systems (NIPS)*, 2016.
- C4 **S. Mandt**, M. Hoffman, and D. Blei. A Variational Analysis of Stochastic Gradient Algorithms. In *Proceedings of the International Conference on Machine Learning (ICML)*, 2016.
- C3 **S. Mandt**, J. McInerney, F. Abrol, R. Ranganath, and D. Blei. Variational Tempering. In *International Conference on Artificial Intelligence and Statistics (AISTATS)*, 2016.
- C2 O. Zadorozhnyi, G. Benecke, **S. Mandt**, T. Scheffer, M. Kloft. Huber-Norm Regularization for Linear Prediction Models . In *European Conference on Machine Learning (ECML)*, 2016.
- C1 **S. Mandt** and D. Blei. Smoothed Gradients for Stochastic Variational Inference. In *Advances in Neural Information Processing Systems, 2438-2446 (NIPS)*, 2014.

Journal Papers

- J13 F. Jirasek, R. Bamler, and **S. Mandt**. Hybridizing Physical and Data-Driven Prediction Methods for Physicochemical Properties. In *Chemical Communications (2020)*.
- J12 F. Jirasek, R. Alves, J. Damay, R. Vandermeulen, R. Bamler, M. Bortz, **S. Mandt**, M. Kloft, and H. Hasse. Machine Learning in Thermodynamics: Prediction of Activity Coefficients by Matrix Completion. In *The Journal of Chemical Physics Letters 11 (2020)*.
- J11 R. Bamler, C. Zhang, M. Opper, and **S. Mandt**. Tightening Bounds for Variational Inference by Revisiting Perturbation Theory. In *Journal of Statistical Mechanics (2019) 124004*.
- J10 C. Zhang, J. Bütepage, H. Kjellström, and **S. Mandt**. Advances in Variational Inference. In *Transactions on Pattern Analysis and Machine Intelligence, pp. 2008-2026 (2019)*.
- J9 **S. Mandt**, H. Hoffman, and D. Blei. Stochastic Gradient Descent as Approximate Bayesian Inference. In *Journal of Machine Learning Research 18 (2017)*.
- J8 **S. Mandt**, F. Wenzel, S. Nakajima, J. Cunningham, C. Lippert, and M. Kloft. Sparse Probit Linear Mixed Model. In *Machine Learning, 106(9), 1621-1642 (2017)*.
- J7 **S. Mandt**, D. Sadri, A. Houck, and H. Tureci. Stochastic Differential Equations for Quantum Dynamics of Spin-Boson Networks. In *New Journal of Physics 17 (5), 053018 (2015)*.
- J6 **S. Mandt**. Damping of Bloch Oscillations: Variational Solutions of the Boltzmann Equation Beyond Linear Response. In *Physical Review A 90, 053624 (2014)*.
- J5 **S. Mandt**, A. Feiguin, S. Manmana. Relaxation Towards Negative Temperatures in Bosonic Systems: Generalized Gibbs Ensembles and Beyond Integrability. In *Phys. Rev. A 88, 043643 (2013)*.
- J4 U. Schneider, L. Hackermüller, J. P. Ronzheimer, S. Will, S. Braun, T. Best, I. Bloch, E. Demler, **S. Mandt**, D. Rasch and A. Rosch. Fermionic Transport in a Homogeneous Hubbard Model: Out-of-Equilibrium Dynamics With Ultracold Atoms. In *Nature Physics 8, 213-218 (2012)*.
- J3 **S. Mandt**, A. Rapp, A. Rosch. Interacting Fermionic Atoms in Optical Lattices Diffuse Symmetrically Upwards and Downwards in a Gravitational Potential. In *Phys. Rev. Lett. 106, 250602 (2011)*.
- J2 A. Rapp, **S. Mandt**, A. Rosch. Equilibration Rates and Negative Absolute Temperatures for Ultracold Atoms in Optical Lattices. In *Phys. Rev. Lett. 105, 220405 (2010)*.
- J1 **S. Mandt**, M. R. Zirnbauer. Zooming in on Local Level Statistics by Supersymmetric Extension of Free Probability. In *J. Phys. A: Math. Theor. 42 (2010) 025201 (33pp)*.

Patents

- P7 E. Doggett, A. Wolak, P.D. Tsatsoulis, N. McCarthy, and **S. Mandt**. Pixel Error Detection System. In *U.S. Patent App. 16/243,650, 2020*.

- P6 C. Schroers, E. Doggett, **S. Mandt**, J. McPhillen, S. Labrozzi, R. Weber, M. Bamert. Systems and Methods for Image Compression at Multiple, Different Bitrates. In *U.S. Patent App. 16/249,861*, 2020.
- P5 S. Lombardo, C. Segalin, L. Chen, R. Navarathna, and **S. Mandt**. Automated Content Evaluation Using a Predictive Model. In *U.S. Patent App. 16/406,632*, 2020.
- P4 **S. Mandt**, C. Schroers, J. Han, and S. Lombardo. Machine Learning Based Video Compression. In *U.S. Patent App. 16/254,475*, 2020.
- P3 **S. Mandt** and Y. Li. Efficient Encoding and Decoding Sequences using Variational Autoencoders. In *U.S. Patent App. 16/024,569*, Dec 2019.
- P2 P. Carr, Z. Deng, R. Navarathna, Y. Yue, and **S. Mandt**. Factorized Variational Autoencoders. In *US Patent App. 15/654,529*, Jan 2019.
- P1 R. Bamler and **S. Mandt**. Dynamic Word Embeddings. In *US Patent App. 15/828,884*, Jun 2018.

Peer-Reviewed Workshop Papers

- W20 A. Li, A. Boyd, P. Smyth, and **S. Mandt**. Variational Beam Search for Continual Learning . In *ICML 2020 Workshop on Continual Learning*.
- W19 R. Yang, Y. Yang, J. Marino, Y. Yang, and **S. Mandt**. Deep Generative Video Compression with Temporal Autoregressive Transform. In *ICML 2020 Workshop on Invertible Neural Networks, Normalizing Flows, and Explicit Likelihood Models*.
- W18 J. Marino, L. Chen, J. He, and **S. Mandt**. Improving Sequential Latent Variable Models with Autoregressive Flows. In *2nd Symposium on Approximate Bayesian Inference (2019)*.
- W17 R. Bamler and **S. Mandt**. A Quantum Field Theory of Representation Learning. In *ICML Workshop on Theoretical Physics for Deep Learning (2019)*.
- W16 F. Wenzel, **S. Mandt**, and M. Kloft. Scalable Feature Extraction in Confounded Data. In *Social Machine Learning Symposium, best paper runner-up (2019)*.
- W15 J. Marino, Y. Yue, and **S. Mandt**. Learning to Infer. In *ICLR Workshop Track (2018)*.
- W14 F. Salehi, R. Bamler, and **S. Mandt**. Probabilistic Knowledge Graph Embeddings. In *Symposium on Approximate Bayesian Inference (2018)*.
- W13 J. Bütepage, J. He, C. Zhang, L. Sigal, G. Mori, and **S. Mandt**. Informed Priors for Deep Representation Learning. In *Symposium on Approximate Bayesian Inference (2018)*.
- W12 F. Wenzel, A. Buchholz, and **S. Mandt**. Quasi Monte Carlo Flows. In *Symposium on Approximate Bayesian Inference (2018)*.
- W11 J. Han, S. Lombardo, C. Schroers, and **S. Mandt**. Video Compression through Deep Bayesian Learning. In *Symposium on Approximate Bayesian Inference (2018)*.
- W10 J. Marino, Y. Yue, and **S. Mandt**. Iterative Inference Models. In *NIPS Workshop on Bayesian Deep Learning (2017)*.
- W9 C. Zhang, C. Öztireli, and **S. Mandt**. Diversified Mini-Batch Sampling using Repulsive Point Processes. In *NIPS Workshop on Approximate Bayesian Inference (2017)*.
- W8 P. Jahnichen, F. Wenzel, M. Kloft, **S. Mandt**. Generalizing and Scaling-up Dynamic Topic Models. In *NIPS Workshop on Approximate Bayesian Inference (2017)*.
- W7 G. Ji, R. Bamler, E. Sudderth, and **S. Mandt**. Bayesian Paragraph Vectors. In *NIPS Workshop on Approximate Bayesian Inference (2017)*.
- W6 R. Bamler and **S. Mandt**. Structured Black Box Variational Inference for Latent Time Series Models. In *ICML Time Series Workshop. Contributed Talk. (2017)*.
- W5 C. Zhang, **S. Mandt**, and H. Kjellström. Balanced Population Stochastic Variational Inference. In *NIPS Workshop on Approximate Bayesian Inference (2016)*.
- W4 **S. Mandt**, F. Wenzel, S. Nakajima, C. Lippert, and M. Kloft. Separating Sparse Signals from Correlated Noise in Binary Classification. In *UAI Workshop on Causation: Foundation to Application (2016)*.

- W3 **S. Mandt**, M. Hoffman, and D. Blei. Continuous-Time Limit of Stochastic Gradient Descent Revisited. In *NIPS Workshop on Optimization (2015)*.
- W2 **S. Mandt**, F. Wenzel, S. Nakajima, J. Cunningham, C. Lippert, and M. Kloft. Finding Sparse Features in Strongly Confounded Medical Binary Data. In *NIPS Workshop on Machine Learning for Healthcare. Contributed Talk. (2015)*.
- W1 **S. Mandt**, F. Wenzel, J. Cunningham, and M. Kloft. Probit Regression with Correlated Label Noise: An EM-EP approach. In *NIPS Workshop on Variational Inference (2014)*.

Theses

- T2 **S. Mandt**. Transport and Non-Equilibrium Dynamics in Optical Lattices. In *Ph.D. Thesis, University of Cologne (2012)*.
- T1 **S. Mandt**. Superbosonization of Invariant Random Matrix Ensembles. In *M.S. Thesis, University of Cologne (2008)*.

Invited and Un-Refereed Publications

- U4 U. Schneider, **S. Mandt**, A. Rapp, S. Braun, H. Weimer, I. Bloch, A. Rosch. Comment on "Consistent Thermostatistics Forbids Negative Absolute Temperatures". In *arXiv:1407.4127 (2014)*.
- U3 **S. Mandt**. Ultrakalt und Doch Heier als Unendlich Hei. In *Monthly proceedings of the German Physical Society (in German), Physik Journal, vol 3 (2013)*.
- U2 U. Schneider, L. Hackermller, J. P. Ronzheimer, S. Will, S. Braun, T. Best, I. Bloch, E. Demler, **S. Mandt**, D. Rasch and A. Rosch. Breakdown of Diffusion: From Collisional Hydrodynamics to a Continuous Quantum Walk in a Homogeneous Hubbard Model. In *arxiv:1005.3545 (2010)*.
- U1 H. Sebert and S. Mandt. Symmetric Spaces Toolkit. In <http://www.stephanmandt.com/papers/SebertMandt2007.pdf> (2007).

Grants

- 2020 *Deep Variational Data Compression*.
NSF, Single Principal Investigator, \$425K.
- 2020 *Forecasting High Dimensional Sequences via Deep Probabilistic Models*.
Qualcomm Research, Unrestricted Gift, Single Principal Investigator, \$90K.
- 2020 *Ultra-Reliable Collaborative Computing for Autonomous Unmanned Aerial Vehicles*.
NSF/Intel, Co-Principal Investigator (w/ Marco Levorato), \$450K.
- 2019 *Generative Expectation-based Response and Novelty Identification*.
DARPA, UCI Principal Investigator (w/ Padhraic Smyth), \$1.6M.
- 2019 *Intelligent Facilitation for Teams of the Future via Longitudinal Sensing in Context*,
National Science Foundation, Co-Principal Investigator, \$462K.
- 2019 *Forecasting High Dimensional Sequences via Deep Probabilistic Models*,
Qualcomm Research, Unrestricted Gift, Single Principal Investigator, \$90K.
- 2016 NVIDIA Hardware Grant, 1 GPU.
- 2015 NSF Support Grant for Junior Researchers (for visiting Dagstuhl Seminar).

Professional Service

Editorial Board Memberships

- 2020– Journal of Machine Learning Research

Conference and Workshop Organization

- Area Chair International Conference on Learning Representations (2021)
- Area Chair Neural Information Processing Systems (2020)

Area Chair International Conference on Machine Learning (2020)
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Area Chair International Conference on Machine Learning (2019)
SPC Member AAAI Conference on Artificial Intelligence (2020)
Advisor Symposium on Advances in Approximate Bayesian Inference (2019)
Advisor Symposium on Advances in Approximate Bayesian Inference (2018)
Organizer NIPS Workshop on Approximate Inference (2017)
Organizer NIPS Workshop on Approximate Inference (2016)
Organizer NIPS Workshop on Approximate Inference (2015)
Session Chair Conference on Uncertainty in Artificial Intelligence (2019)
Session Chair International Conference on Machine Learning (2017)

Reviewing

Grants Panelist, Swiss National Science Foundation (2020)
Panelist, National Science Foundation CISE IIS (2019)
Panelist, National Science Foundation CISE IIS (2018)
Journals Nature Machine Intelligence, Journal of Machine Learning Research,
Digital Signal Processing,
Physical Review A (atomic physics),
Physical Review E (statistical physics),
Data Mining and Knowledge Discovery,
Transactions on Pattern Analysis and Machine Intelligence,
Bernoulli.
Conferences Neural Information Processing Systems,
Artificial Intelligence and Statistics,
International Conference of Machine Learning,
International Conference on Learning Representations,
Symposium on Advances in Approximate Bayesian Inference.

Advisory Roles

Advisory Board Emergent AI Research Center, University of Mainz, Germany (2019–present)

University Service

Campus Level Service

2020 Member, Academic Senate, representing computer science

Department Service

Member Graduate Admissions Committee (2020)
Organizer UCI Prospective PhD Students' Day, 2019
Member Graduate Admissions Committee (2019)

Student Committees, not advised

22 Apr 2020 PhD Graduation Committee, *Florian Schmidt*, Advised by Thomas Hofmann, ETH Zürich
13 Nov 2019 PhD Graduation Committee, *Farnood Salehi*, Advised by Patrick Thiran, EPFL Lausanne
13 Nov 2019 PhD Graduation Committee, *Geng Ji*, Advised by Erik Sudderth, UC Irvine
25 Sept 2020 Advancement Committee, *Preston Putzel*, Advised by Padhraic Smyth, UC Irvine
15 Jun 2020 Advancement Committee, *Dheeru Dua*, Advised by Sameer Singh, UC Irvine
22 Nov 2019 Advancement Committee, *Hao Tang*, Advised by Xiaohui Xie, UC Irvine

- 22 Nov 2019 Advancement Committee, *Bhupalee Kalita*, Advised by Kieron Burke, UC Irvine
- 22 Oct 2018 Advancement Committee, *Geng Ji*, Advised by Erik Sudderth, UC Irvine
- 22 May 2019 Advancement Committee, *Ted Grover*, Advised by Gloria Mark, UC Irvine
- 06 Jun 2019 Advancement Committee, *Disi Ji*, Advised by Padhraic Smyth, UC Irvine
- 13 Jun 2019 Advancement Committee, *Yoshimoto Matsubara*, Advised by Marco Levorato, UC Irvine
- 30 Sept 2019 Advancement Committee, *Robert Logan*, Advised by Sameer Singh, UC Irvine
- 06 Sept 2019 Master Thesis Committee, *Peter Schaedler*, Advised by Sameer Singh, UC Irvine
- 29 May 2019 Master Thesis Committee, *Chirag Choudhary*, Advised by Sameer Singh, UC Irvine
- 30 May 2019 Master Thesis Committee, *Madina Abdrakhmanova*, Advised by Erik Sudderth, UC Irvine

Outreach Activities

- 2019–present Advisor, AI Club, UC Irvine
- 11/2019 Invited Panelist, Improving CS Graduate School Applications, UC Irvine
- 10/2018 Invited Panelist, AI Club: Careers in AI, UC Irvine

Mentoring and Group Leadership

Postdocs

- 2017– Robert Bamler, currently at UC Irvine, soon to be Assistant Professor in Germany
- 2019-2020 Fabian Jirasek, now Assistant Professor at TU Kaiserslautern
- 01-12/2017 Cheng Zhang, now Researcher at Microsoft Research Cambridge
- 01-10/2018 Salvator Lombardo, now Associate Research Scientist at Disney Research

Graduate Students

- 2014–2020 Florian Wenzel (with Marius Kloft), now Researcher at Google Brain
- 2019– Yibo Yang, PhD student
- 2019– Aodong Li, PhD student
- 2019– Alex Boyd, PhD student (with Padhraic Smyth)
- 2019– Ruihan Yang, PhD student
- 2020– Antonios Alexos, PhD student

Academic Visitors

- 2019 Vincent Fortuin, visiting PhD student, ETH Zürich
- 2018 Florian Schmidt, visiting PhD student, ETH Zürich

Interns

- 2017 Yingzhen Li, now Researcher at Microsoft Research
- 2018 Lei Chen, Simon Frazier University
- 2018 Farnood Salehi, now Associate Research Scientist at Disney Research
- 2018 Jun Han, Dartmouth College
- 2018 Joel Castellon, now at Amazon Berlin
- 2017 Geng Ji, now at Facebook
- 2017 Judith Butepage, now Reserarcher at Spotify
- 2017 Joseph Marino, Caltech
- 2016 Zhiwei Deng, now Postdoc at Princeton University

Undergraduate Students

- 2020 Zhouhang Xie, UC Irvine
- 2020 Chenhao Li, UC Irvine

- 2020 Jens Tuyls, UC Irvine
2019 Brett Taylor Galkowski, UC Irvine

Talks

Keynotes or Equivalent

- 9/2020 **Compressing Variational Bayes.**
Laplace's Demon Lecture Series, Criteo AI
- 7/2020 **Deep Learning under Resource Constraints.**
CASA Distinguished Lecture, University of Bochum, Germany
- 3/2019 **Deep Generative Models for Structured Data.**
Kavli Frontiers of Science Workshop, National Academy of Science
- 9/2018 **Finding Hidden Structure in Data with Deep Probabilistic Models.**
LWDA Conference, Mannheim, Germany.

Tutorials

- 08/2018 **Discovering Hidden Structure in Data with Deep Probabilistic Models.**
Disney Data Analytics Conference, ca. 150 attendants.
- 07/2017 **Deep Learning, Far Reaching: An Introduction.**
Disney Data Analytics Conference, ca. 150 attendants.

Invited Talks at Workshops, Universities, and Companies

- 9/2020 Google Brain
- 6/2020 Physical Sciences ML Nexus, School of Physical Sciences, UCI
- 6/2020 Mahoney Group Seminar, UC Berkeley
- 2/2020 Data Science Seminar, Statistics Department, UCI
- 8/2019 Machine Learning Colloquium, ETH Zürich, Switzerland
- 8/2019 Machine Learning Seminar, Technical University of Kaiserslautern, Germany
- 5/2019 Statistics Seminar Series, University of California, Irvine, CA, USA
- 2/2019 Workshop 'At the Crossroads of Physics and Machine Learning', UC Santa Barbara
- 2018 CS Colloquium, University of California, Santa Cruz, CA, USA
- 2018 CS Colloquium, University of California, Los Angeles, CA, USA
- 2018 CS Colloquium, University of California, Irvine, CA, USA
- 2017 CS Colloquium, UMass Amherst, MA, USA
- 2017 CS Colloquium, EPFL, Lausanne, Switzerland
- 2017 ML Lunch Seminar, Carnegie Mellon University, Pennsylvania, USA
- 2017 Disney Data Analytics Conference, Orlando, USA
- 2017 CS Colloquium, University of Southern California, California, USA
- 2017 CS Colloquium, ETH Zürich, Switzerland
- 2017 ML and Friends Seminar, UMass Amherst, Massachusetts, USA
- 2016 AI Seminar, Carnegie Mellon University, Pennsylvania, USA
- 2016 California Institute of Technology, Pasadena, USA
- 2016 Data Science Colloquium, Rutgers University, Newark, USA
- 2016 Google Research, Mountain View, USA
- 2016 Microsoft, Sunnyvale, USA
- 2016 Computer Science Colloquium, University of Rhode Island, USA
- 2016 Computer Science Colloquium, University of Colorado at Boulder, USA

2016 National Renewable Energy Laboratory (NREL), Golden, CO, USA
2015 Adobe Research, San Francisco, USA.
2015 Human Longevity Inc., Mountain View, USA.
2015 Schloss Dagstuhl Seminar, Leibniz Center for Informatics, Germany.
Machine Learning with Interdependent and Non-identically Distributed Data
2015 Machine Learning Seminar, Humboldt University Berlin, Germany.
2015 Machine Learning Seminar, Technical University Berlin, Germany.
2015 Machine Learning Seminar, University of British Columbia, Canada.
2015 D-Wave Systems, Burnaby, Canada.
2014 IBM Watson Research Center, Yorktown Heights, USA
2014 Emergent Phenomena in the Dynamics of Quantum Matter, New York, USA.
2013 Theoretical Physics Seminar, University of Otago, Dunedin, New Zealand.
2012 Theoretical Physics Seminar, Princeton University, Princeton, USA.
2011 Finite Temperature Non-Equilibrium Superfluid Systems, Heidelberg, Germany.
2010 Theoretical Physics Seminar, University of Colorado, Boulder, USA.
2010 Theoretical Physics Seminar, Ecole Polytechnique, Palaiseau, France.

Teaching Experience

Spring 2020 Instructor, CS 295: Deep Generative Models, UC Irvine.
Enrollment: 55.

Winter 2020 Instructor, CS 178: Machine Learning and Data Mining, UC Irvine.
Enrollment: 340.

Fall 2019 Instructor, CS 273A: Machine Learning, UC Irvine.
Enrollment: 120.

Spring 2019 Instructor, CS 295: Deep Generative Models, UC Irvine.
Enrollment: 55.

11/2018 Guest Lecturer, Title: "Deep Learning", UC Irvine.

10/2015 Guest Lecturer, Title: "Stochastic Gradient Descent", Humboldt University Berlin.

2/2015 Guest Lecturer, Title: "Variational Inference", Humboldt University Berlin.

Fall 2013 Instructor, Condensed Matter Field Theory, Princeton University (extracurricular).

Spring 2012 Teaching Assistant, Computer Physics, University of Cologne.

Fall 2011 Teaching Assistant, Mathematical Methods, University of Cologne.

Spring 2011 Teaching Assistant, Quantum Field Theory II, University of Cologne.

Fall 2010 Teaching Assistant, Quantum Field Theory I, University of Cologne.

Spring 2010 Teaching Assistant, Statistical Physics, University of Cologne.

Fall 2009 Teaching Assistant, Quantum Physics, University of Cologne.

Spring 2009 Teaching Assistant, Electrodynamics, University of Cologne.

Fall 2008 Teaching Assistant, Classical Mechanics, University of Cologne.