Stanford

Stefano Ermon

Associate Professor of Computer Science and Senior Fellow at the Woods Institute for the Environment

Bio

BIO

I am an Assistant Professor in the Department of Computer Science at Stanford University, where I am affiliated with the Artificial Intelligence Laboratory and a fellow of the Woods Institute for the Environment.

My research is centered on techniques for scalable and accurate inference in graphical models, statistical modeling of data, large-scale combinatorial optimization, and robust decision making under uncertainty, and is motivated by a range of applications, in particular ones in the emerging field of computational sustainability.

ACADEMIC APPOINTMENTS

- Associate Professor, Computer Science
- Senior Fellow, Stanford Woods Institute for the Environment
- Faculty Affiliate, Institute for Human-Centered Artificial Intelligence (HAI)

HONORS AND AWARDS

- Sloan Research Fellowship, Alfred P. Sloan Foundation
- IJCAI Computers and Thought Award, IJCAI
- Microsoft Research Faculty Fellowship, Microsoft Research
- NSF CAREER Award, National Science Foundation
- ONR Young Investigator Award, Office of Naval Research
- AFOSR Young Investigator Award, Air Force Office of Scientific Research
- AWS Machine Learning Research Award, Amazon Web Services (AWS)
- Sony Faculty Innovation Award, Sony
- Hellman Fellowship, Hellman Foundation
- AAAI 2017 Outstanding Paper Award, AAAI
- Bloomberg Data Science Research Grant, Bloomberg
- 10 World Changing Ideas of 2016, Scientific American
- First Place, World Bank Big Data Innovation Challenge, World Bank
- Finalist, NVIDIA Global Impact Award, NVIDIA

PROFESSIONAL EDUCATION

- Ph.D., Cornell University , Computer Science (2015)

LINKS

- Personal Site: https://cs.stanford.edu/~ermon/

- Group Site: https://cs.stanford.edu/~ermon/website/

Teaching

COURSES

2023-24

- Data for Sustainable Development: CS 325B, EARTHSYS 162, EARTHSYS 262 (Aut)

- Deep Generative Models: CS 236 (Aut)

- Probabilistic Graphical Models: Principles and Techniques: CS 228 (Win)

2022-23

- Probabilistic Graphical Models: Principles and Techniques: CS 228 (Win)

2021-22

- Data for Sustainable Development: CS 325B, EARTHSYS 162, EARTHSYS 262 (Aut)

- Deep Generative Models: CS 236 (Aut)

- Probabilistic Graphical Models: Principles and Techniques: CS 228 (Win)

2020-21

- Probabilistic Graphical Models: Principles and Techniques: CS 228 (Win)

STANFORD ADVISEES

Doctoral Dissertation Reader (AC)

Nick Landolfi, Bernard Lange, Jeff Z. HaoChen, Allan Zhou

Postdoctoral Faculty Sponsor

Syrine Belakaria, Dongjun Kim, Felix Petersen, Zhuo Zheng

Doctoral Dissertation Advisor (AC)

Silas Alberti, Amil Merchant

Master's Program Advisor

Julian Chu, Jessica Chudnovsky, Tianyuan Dai, Gui Dávid, Ryan Guan, Hidy Han, Lingjie Kong, Jacob Mejia, Sarah Raza, Ryne Reger, Amol Singh, Caroline Wang, Timothy Wu

Doctoral Dissertation Co-Advisor (AC)

Jeremy Irvin, Pratyusha Kalluri

Doctoral (Program)

Silas Alberti, Chris Cundy, Aaron Lou, Charlie Marx, Chenlin Meng, Michael Poli, Minkai Xu, Linqi Zhou

Publications

PUBLICATIONS

- **Towards general-purpose representation learning of polygonal geometries** *GEOINFORMATICA*
  Mai, G., Jiang, C., Sun, W., Zhu, R., Xuan, Y., Cai, L., Janowicz, K., Ermon, S., Lao, N.

2022

- **Density Ratio Estimation via Infinitesimal Classification**
  Choi, K., Meng, C., Song, Y., Ermon, S., Camps-Valls, G., Ruiz, F. J., Valera
  JMLR-JOURNAL MACHINE LEARNING RESEARCH.2022

- **Bayesian learning for rapid prediction of lithium-ion battery-cycling protocols** *JOULE*
  Jiang, B., Gent, W. E., Mohr, F., Das, S., Berliner, M. D., Forsuelo, M., Zhao, H., Attia, P. M., Grover, A., Herring, P. K., Bazant, M. Z., Harris, S. J., Ermon, et al
  2021; 5 (12): 3187-3203

- **Scalable deep learning to identify brick kilns and aid regulatory capacity.** *Proceedings of the National Academy of Sciences of the United States of America*
  Lee, J., Brooks, N. R., Tajwar, F., Burke, M., Ermon, S., Lobell, D. B., Biswas, D., Luby, S. P.
  2021; 118 (17)

- **Using satellite imagery to understand and promote sustainable development.** *Science (New York, N.Y.)*
  Burke, M., Driscoll, A., Lobell, D. B., Ermon, S.
  2021; 371 (6535)

- **Multi-agent Imitation Learning with Copulas**
  Wang, H., Yu, L., Cao, Z., Ermon, S., Oliver, N., Perez-Cruz, F., Kramer, S., Read, J., Lozano, J. A.
  SPRINGER INTERNATIONAL PUBLISHING AG.2021: 139-156

- **Challenges in KDD and ML for Sustainable Development**
  Berti-Equille, L., Dao, D., Ermon, S., Goswami, B., ASSOC COMP MACHINERY
  ASSOC COMPUTING MACHINERY.2021: 4031-4032

- **Geography-Aware Self-Supervised Learning**
  Ayush, K., Uzkent, B., Meng, C., Tanmay, K., Burke, M., Lobell, D., Ermon, S., IEEE
  IEEE.2021: 10161-10170

- **Accelerating Feedforward Computation via Parallel Nonlinear Equation Solving**
  Song, Y., Meng, C., Liao, R., Ermon, S., Meila, M., Zhang, T.
  JMLR-JOURNAL MACHINE LEARNING RESEARCH.2021

- **Bayesian Algorithm Execution: Estimating Computable Properties of Black-box Functions Using Mutual Information**
  Neiswanger, W., Wang, K., Ermon, S., Meila, M., Zhang, T.
  JMLR-JOURNAL MACHINE LEARNING RESEARCH.2021

- **Temporal Predictive Coding For Model-Based Planning In Latent Space**
  Nguyen, T., Shu, R., Pham, T., Bui, H., Ermon, S., Meila, M., Zhang, T.
  JMLR-JOURNAL MACHINE LEARNING RESEARCH.2021

- **Efficient Poverty Mapping from High Resolution Remote Sensing Images**
  Ayush, K., Uzkent, B., Tanmay, K., Burke, M., Lobell, D., Ermon, S., Assoc Advancement Artificial Intelligence
  ASSOC ADVANCEMENT ARTIFICIAL INTELLIGENCE.2021: 12-20

- **Predicting Livelihood Indicators from Community-Generated Street-Level Imagery**
  Lee, J., Grosz, D., Uzkent, B., Zeng, S., Burke, M., Lobell, D., Ermon, S., Assoc Advancement Artificial Intelligence
  ASSOC ADVANCEMENT ARTIFICIAL INTELLIGENCE.2021: 268-276

- **Reward Identification in Inverse Reinforcement Learning**
  Kim, K., Garg, S., Shiragur, K., Ermon, S., Meila, M., Zhang, T.
  JMLR-JOURNAL MACHINE LEARNING RESEARCH.2021

- **Right Decisions from Wrong Predictions: A Mechanism Design Alternative to Individual Calibration**
  Zhao, S., Ermon, S., Banerjee, A., Fukumizu, K.
  MICROTOME PUBLISHING.2021

- **A Framework for Sample Efficient Interval Estimation with Control Variates**
  Zhao, S., Yeh, C., Ermon, S., Chiappa, S., Calandra, R.

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- **AlignFlow: Cycle Consistent Learning from Multiple Domains via Normalizing Flows**
  Grover, A., Chute, C., Shu, R., Cao, Z., Ermon, S., Assoc Advancement Artificial Intelligence
  ASSOC ADVANCEMENT ARTIFICIAL INTELLIGENCE.2020: 4028-4035

- **Meta-Amortized Variational Inference and Learning**
  Wu, M., Choi, K., Goodman, N., Ermon, S., Assoc Advancement Artificial Intelligence
  ASSOC ADVANCEMENT ARTIFICIAL INTELLIGENCE.2020: 6404-6412

- **Sliced Score Matching: A Scalable Approach to Density and Score Estimation**
  Song, Y., Garg, S., Shi, J., Ermon, S., Adams, R. P., Gogate
  JMLR-JOURNAL MACHINE LEARNING RESEARCH.2020: 574-584

- **Adaptive Hashing for Model Counting**
  Kuck, J., Dao, T., Zhao, S., Bartan, B., Sabharwal, A., Ermon, S., Adams, R. P., Gogate
  JMLR-JOURNAL MACHINE LEARNING RESEARCH.2020: 271-280

- **Fair Generative Modeling via Weak Supervision**
  Choi, K., Grover, A., Singh, T., Shu, R., Ermon, S., Daume, H., Singh, A.
  JMLR-JOURNAL MACHINE LEARNING RESEARCH.2020

- **Domain Adaptive Imitation Learning**
  Kim, K., Gu, Y., Song, J., Zhao, S., Ermon, S., Daume, H., Singh, A.
  JMLR-JOURNAL MACHINE LEARNING RESEARCH.2020

- **Flexible Approximate Inference via Stratified Normalizing Flows**
  Cundy, C., Ermon, S., Peters, J., Sontag, D.
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- **Using publicly available satellite imagery and deep learning to understand economic well-being in Africa.** *Nature communications*
  Yeh, C. n., Perez, A. n., Driscoll, A. n., Azzari, G. n., Tang, Z. n., Lobell, D. n., Ermon, S. n., Burke, M. n.
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- **Closed-loop optimization of fast-charging protocols for batteries with machine learning.** *Nature*
  Attia, P. M., Grover, A. n., Jin, N. n., Severson, K. A., Markov, T. M., Liao, Y. H., Chen, M. H., Cheong, B. n., Perkins, N. n., Yang, Z. n., Herring, P. K., Aykol, M. n., Harris, et al
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- **Efficient Object Detection in Large Images Using Deep Reinforcement Learning**
  Uzkent, B., Yeh, C., Ermon, S., IEEE Comp Soc
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- **Cloud Removal in Satellite Images Using Spatiotemporal Generative Networks**
  Sarukkai, V., Jain, A., Uzkent, B., Ermon, S., IEEE Comp Soc
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- **Permutation Invariant Graph Generation via Score-Based Generative Modeling**
  Niu, C., Song, Y., Song, J., Zhao, S., Grover, A., Ermon, S., Chiappa, S., Calandra, R.
  ADDISON-WESLEY PUBL CO.2020: 4474–83

- **Gaussianization Flows**
  Meng, C., Song, Y., Song, J., Ermon, S., Chiappa, S., Calandra, R.
  ADDISON-WESLEY PUBL CO.2020: 4336–44

- **Streamlining variational inference for constraint satisfaction problems** *JOURNAL OF STATISTICAL MECHANICS-THEORY AND EXPERIMENT*
  Grover, A., Achim, T., Ermon, S.
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- **Computational Sustainability: Computing for a Better World and a Sustainable Future** *COMMUNICATIONS OF THE ACM*
  Gomes, C., Dietterich, T., Barrett, C., Conrad, J., Dilkina, B., Ermon, S., Fang, F., Farnsworth, A., Fern, A., Fern, X., Fink, D., Fisher, D., Flecker, et al

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- **High-Voltage Charging-Induced Strain, Heterogeneity, and Micro-Cracks in Secondary Particles of a Nickel-Rich Layered Cathode Material** *ADVANCED FUNCTIONAL MATERIALS*

  Mao, Y., Wang, X., Xia, S., Zhang, K., Wei, C., Bak, S., Shadike, Z., Liu, X., Yang, Y., Xu, R., Pianetta, P., Ermon, S., Stavitski, et al

  2019; 29 (18)

- **Using machine learning to discover shape descriptors for predicting emulsion stability in a microfluidic channel** *SOFT MATTER*

  Khor, J., Jean, N., Luxenberg, E. S., Ermon, S., Tang, S. Y.

  2019; 15 (6): 1361–72

- **InfoVAE: Balancing Learning and Inference in Variational Autoencoders**

  Zhao, S., Song, J., Ermon, S., AAAI

  ASSOC ADVANCEMENT ARTIFICIAL INTELLIGENCE.2019: 5885–92

- **Mapping Missing Population in Rural India: A Deep Learning Approach with Satellite Imagery**

  Hu, W., Patel, J., Robert, Z., Novosad, P., Asher, S., Tang, Z., Burke, M., Lobell, D., Ermon, S., Assoc Comp Machinery

  ASSOC COMPUTING MACHINERY.2019: 353–59

- **Tile2Vec: Unsupervised Representation Learning for Spatially Distributed Data**

  Jean, N., Wang, S., Samar, A., Azzari, G., Lobell, D., Ermon, S., AAAI

  ASSOC ADVANCEMENT ARTIFICIAL INTELLIGENCE.2019: 3967–74

- **Rapid identification of pathogenic bacteria using Raman spectroscopy and deep learning.** *Nature communications*

  Ho, C. S., Jean, N. n., Hogan, C. A., Blackmon, L. n., Jeffrey, S. S., Holodniy, M. n., Banaei, N. n., Saleh, A. A., Ermon, S. n., Dionne, J. n.

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- **Training Variational Autoencoders with Buffered Stochastic Variational Inference**

  Shu, R., Bui, H. H., Whang, J., Ermon, S., Chaudhuri, K., Sugiyama, M.

  MICROTOME PUBLISHING.2019

- **Learning Controllable Fair Representations**

  Song, J., Kalluri, P., Grover, A., Zhao, S., Ermon, S., Chaudhuri, K., Sugiyama, M.

  MICROTOME PUBLISHING.2019

- **Uncertainty Autoencoders: Learning Compressed Representations via Variational Information Maximization**

  Grover, A., Ermon, S., Chaudhuri, K., Sugiyama, M.

  MICROTOME PUBLISHING.2019

- **Differentiable Antithetic Sampling for Variance Reduction in Stochastic Variational Inference**

  Wu, M., Goodman, N., Ermon, S., Chaudhuri, K., Sugiyama, M.

  MICROTOME PUBLISHING.2019

- **Predicting Economic Development using Geolocated Wikipedia Articles**

  Sheehan, E., Meng, C., Tan, M., Uzkent, B., Jean, N., Burke, M., Lobell, D., Ermon, S., Assoc Comp Machinery

  ASSOC COMPUTING MACHINERY.2019: 2698–2706

- **Bias Correction of Learned Generative Models using Likelihood-Free Importance Weighting**

  Grover, A., Song, J., Agarwal, A., Tran, K., Kapoor, A., Horvitz, E., Ermon, S., Wallach, H., Larochelle, H., Beygelzimer, A., d'Alche-Buc, F., Fox, E., Garnett, et al

  NEURAL INFORMATION PROCESSING SYSTEMS (NIPS).2019

- **MintNet: Building Invertible Neural Networks with Masked Convolutions**

  Song, Y., Meng, C., Ermon, S., Wallach, H., Larochelle, H., Beygelzimer, A., d'Alche-Buc, F., Fox, E., Garnett, R.

  NEURAL INFORMATION PROCESSING SYSTEMS (NIPS).2019

- **Meta-Inverse Reinforcement Learning with Probabilistic Context Variables**

  Yu, L., Yu, T., Finn, C., Ermon, S., Wallach, H., Larochelle, H., Beygelzimer, A., d'Alche-Buc, F., Fox, E., Garnett, R.

  NEURAL INFORMATION PROCESSING SYSTEMS (NIPS).2019

- **Approximating the Permanent by Sampling from Adaptive Partitions**

Kuck, J., Dao, T., Rezatofighi, H., Sabharwal, A., Ermon, S., Wallach, H., Larochelle, H., Beygelzimer, A., d'Alche-Buc, F., Fox, E., Garnett, R.
NEURAL INFORMATION PROCESSING SYSTEMS (NIPS).2019

- **Generative Modeling by Estimating Gradients of the Data Distribution**
  Song, Y., Ermon, S., Wallach, H., Larochelle, H., Beygelzimer, A., d'Alche-Buc, F., Fox, E., Garnett, R.
  NEURAL INFORMATION PROCESSING SYSTEMS (NIPS).2019

- **Temporal FiLM: Capturing Long-Range Sequence Dependencies with Feature-Wise Modulation**
  Birnbaum, S., Kuleshov, V., Enam, S., Koh, P., Ermon, S., Wallach, H., Larochelle, H., Beygelzimer, A., d'Alche-Buc, F., Fox, E., Garnett, R.
  NEURAL INFORMATION PROCESSING SYSTEMS (NIPS).2019

- **Using machine learning to discover shape descriptors for predicting emulsion stability in a microfluidic channel.** *Soft matter*
  Khor, J. W., Jean, N., Luxenberg, E. S., Ermon, S., Tang, S. K.
  2018

- **Learning with Weak Supervision from Physics and Data-Driven Constraints** *AI MAGAZINE*
  Ren, H., Stewart, R., Song, J., Kuleshov, V., Ermon, S.
  2018; 39 (1): 27–38

- **Bias and Generalization in Deep Generative Models: An Empirical Study**
  Zhao, S., Ren, H., Yuan, A., Song, J., Goodman, N., Ermon, S., Bengio, S., Wallach, H., Larochelle, H., Grauman, K., CesaBianchi, N., Garnett, R.
  NEURAL INFORMATION PROCESSING SYSTEMS (NIPS).2018

- **Variational Rejection Sampling**
  Grover, A., Gummadi, R., Lazaro-Gredilla, M., Schuurmans, D., Ermon, S., Storkey, A., PerezCruz, F.
  MICROTOME PUBLISHING.2018

- **Best arm identification in multi-armed bandits with delayed feedback**
  Grover, A., Markov, T., Attia, P., Jin, N., Perkins, N., Cheong, B., Chen, M., Yang, Z., Harris, S., Chueh, W., Ermon, S., Storkey, A., PerezCruz, et al
  MICROTOME PUBLISHING.2018

- **The Information Autoencoding Family: A Lagrangian Perspective on Latent Variable Generative Models**
  Zhao, S., Song, J., Ermon, S., Globerson, A., Silva, R.
  AUAI PRESS.2018: 1031–41

- **Bayesian optimization and attribute adjustment**
  Eismann, S., Levy, D., Shu, R., Bartzsch, S., Ermon, S., Globerson, A., Silva, R.
  AUAI PRESS.2018: 1042–52

- **End-to-End Learning of Motion Representation for Video Understanding**
  Fan, L., Huang, W., Gan, C., Ermon, S., Gong, B., Huang, J., IEEE
  IEEE.2018: 6016–25

- **Semi-supervised Deep Kernel Learning: Regression with Unlabeled Data by Minimizing Predictive Variance**
  Jean, N., Xie, S., Ermon, S., Bengio, S., Wallach, H., Larochelle, H., Grauman, K., CesaBianchi, N., Garnett, R.
  NEURAL INFORMATION PROCESSING SYSTEMS (NIPS).2018

- **Infrastructure Quality Assessment in Africa using Satellite Imagery and Deep Learning**
  Oshri, B., Hu, A., Adelson, P., Chen, X., Dupas, P., Weinstein, J., Burke, M., Lobell, D., Ermon, S., ACM
  ASSOC COMPUTING MACHINERY.2018: 616–25

- **Deep Transfer Learning for Crop Yield Prediction with Remote Sensing Data**
  Wang, A. X., Tran, C., Desai, N., Lobell, D., Ermon, S., Assoc Comp Machinery
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- **Amortized Inference Regularization**
  Shu, R., Bui, H. H., Zhao, S., Kochenderfer, M. J., Ermon, S., Bengio, S., Wallach, H., Larochelle, H., Grauman, K., CesaBianchi, N., Garnett, R.
  NEURAL INFORMATION PROCESSING SYSTEMS (NIPS).2018

- **Flow-GAN: Combining Maximum Likelihood and Adversarial Learning in Generative Models**
  Grover, A., Dhar, M., Ermon, S., AAAI

ASSOC ADVANCEMENT ARTIFICIAL INTELLIGENCE.2018: 3069–76

- **Boosted Generative Models**
  Grover, A., Ermon, S., AAAI
  ASSOC ADVANCEMENT ARTIFICIAL INTELLIGENCE.2018: 3077–84

- **Approximate Inference via Weighted Rademacher Complexity**
  Kuck, J., Sabharwal, A., Ermon, S., AAAI
  ASSOC ADVANCEMENT ARTIFICIAL INTELLIGENCE.2018: 6376–83

- **Deterministic Policy Optimization by Combining Pathwise and Score Function Estimators for Discrete Action Spaces**
  Levy, D., Ermon, S., AAAI
  ASSOC ADVANCEMENT ARTIFICIAL INTELLIGENCE.2018: 3474–81

- **Constructing Unrestricted Adversarial Examples with Generative Models**
  Song, Y., Shu, R., Kushman, N., Ermon, S., Bengio, S., Wallach, H., Larochelle, H., Grauman, K., CesaBianchi, N., Garnett, R.
  NEURAL INFORMATION PROCESSING SYSTEMS (NIPS).2018

- **Multi-Agent Generative Adversarial Imitation Learning**
  Song, J., Ren, H., Sadigh, D., Ermon, S., Bengio, S., Wallach, H., Larochelle, H., Grauman, K., CesaBianchi, N., Garnett, R.
  NEURAL INFORMATION PROCESSING SYSTEMS (NIPS).2018

- **Streamlining Variational Inference for Constraint Satisfaction Problems**
  Grover, A., Achim, T., Ermon, S., Bengio, S., Wallach, H., Larochelle, H., Grauman, K., CesaBianchi, N., Garnett, R.
  NEURAL INFORMATION PROCESSING SYSTEMS (NIPS).2018

- **Coupling between oxygen redox and cation migration explains unusual electrochemistry in lithium-rich layered oxides** *NATURE COMMUNICATIONS*
  Gent, W. E., Lim, K., Liang, Y., Li, Q., Barnes, T., Ahn, S., Stone, K. H., McIntire, M., Hong, J., Song, J., Li, Y., Mehta, A., Ermon, et al
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- **Coupling between oxygen redox and cation migration explains unusual electrochemistry in lithium-rich layered oxides.** *Nature communications*
  Gent, W. E., Lim, K., Liang, Y., Li, Q., Barnes, T., Ahn, S. J., Stone, K. H., McIntire, M., Hong, J., Song, J. H., Li, Y., Mehta, A., Ermon, et al
  2017; 8 (1): 2091

- **A Survey on Behavior Recognition Using WiFi Channel State Information** *IEEE COMMUNICATIONS MAGAZINE*
  Yousefi, S., Narui, H., Dayal, S., Ermon, S., Valaee, S.
  2017; 55 (10): 98-104

- **Autotuning Stencil Computations with Structural Ordinal Regression Learning**
  Cosenza, B., Durillo, J. J., Ermon, S., Juurlink, B., IEEE
  IEEE.2017: 287–96

- **Label-Free Supervision of Neural Networks with Physics and Domain Knowledge**
  Stewart, R., Ermon, S., AAAI
  ASSOC ADVANCEMENT ARTIFICIAL INTELLIGENCE.2017: 2576-2582

- **Deep Gaussian Process for Crop Yield Prediction Based on Remote Sensing Data**
  You, J., Li, X., Low, M., Lobell, D., Ermon, S., AAAI
  ASSOC ADVANCEMENT ARTIFICIAL INTELLIGENCE.2017: 4559-4565

- **General Bounds on Satisfiability Thresholds for Random CSPs via Fourier Analysis**
  Wei, C., Ermon, S., AAAI
  ASSOC ADVANCEMENT ARTIFICIAL INTELLIGENCE.2017: 3958-3965

- **Estimating Uncertainty Online Against an Adversary**
  Kuleshov, V., Ermon, S., AAAI
  ASSOC ADVANCEMENT ARTIFICIAL INTELLIGENCE.2017: 2110-2116

- **Deep Hybrid Models: Bridging Discriminative and Generative Approaches**
  Kuleshov, V., Ermon, S., AUAI

AUAI PRESS.2017

- **Fast Amortized Inference and Learning in Log-linear Models with Randomly Perturbed Nearest Neighbor Search**
Mussmann, S., Levy, D., Ermon, S., AUAI
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- **A-NICE-MC: Adversarial Training for MCMC**
Song, J., Zhao, S., Ermon, S., Guyon, Luxburg, U. V., Bengio, S., Wallach, H., Fergus, R., Vishwanathan, S., Garnett, R.
NEURAL INFORMATION PROCESSING SYSTEMS (NIPS).2017

- **InfoGAIL: Interpretable Imitation Learning from Visual Demonstrations**
Li, Y., Song, J., Ermon, S., Guyon, Luxburg, U. V., Bengio, S., Wallach, H., Fergus, R., Vishwanathan, S., Garnett, R.
NEURAL INFORMATION PROCESSING SYSTEMS (NIPS).2017

- **Monitoring Ethiopian Wheat Fungus with Satellite Imagery and Deep Feature Learning**
Pryzant, R., Ermon, S., Lobell, D., IEEE
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- **Unsupervised Data Mining in nanoscale X-ray Spectro-Microscopic Study of NdFeB Magnet** *SCIENTIFIC REPORTS*
Duan, X., Yang, F., Antono, E., Yang, W., Pianetta, P., Ermon, S., Mehta, A., Liu, Y.
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- **Combining satellite imagery and machine learning to predict poverty.** *Science*
Jean, N., Burke, M., Xie, M., Davis, W. M., Lobell, D. B., Ermon, S.
2016; 353 (6301): 790-794

- **Transfer Learning from Deep Features for Remote Sensing and Poverty Mapping**
Xie, M., Jean, N., Burke, M., Lobell, D., Ermon, S., AAAI
ASSOC ADVANCEMENT ARTIFICIAL INTELLIGENCE.2016: 3929–35

- **Generative Adversarial Imitation Learning**
Ho, J., Ermon, S., Lee, D. D., Sugiyama, M., Luxburg, U. V., Guyon, Garnett, R.
NEURAL INFORMATION PROCESSING SYSTEMS (NIPS).2016

- **Probabilistic Inference by Hashing and Optimization** *PERTURBATIONS, OPTIMIZATION, AND STATISTICS*
Ermon, S., Hazan, T., Papandreou, G., Tarlow, D.
2016: 265-288

- **Tight Variational Bounds via Random Projections and I-Projections**
Hsu, L., Achim, T., Ermon, S., Gretton, A., Robert, C. C.
MICROTOME PUBLISHING.2016: 1087-1095

- **Closing the Gap Between Short and Long XORs for Model Counting**
Zhao, S., Chaturapruek, S., Sabharwal, A., Ermon, S., AAAI
ASSOC ADVANCEMENT ARTIFICIAL INTELLIGENCE.2016: 3322-3328

- **Exact Sampling with Integer Linear Programs and Random Perturbations**
Kim, C., Sabharwal, A., Ermon, S., AAAI
ASSOC ADVANCEMENT ARTIFICIAL INTELLIGENCE.2016: 3248-3254

- **Adaptive Concentration Inequalities for Sequential Decision Problems**
Zhao, S., Zhou, E., Sabharwal, A., Ermon, S., Lee, D. D., Sugiyama, M., Luxburg, U. V., Guyon, Garnett, R.
NEURAL INFORMATION PROCESSING SYSTEMS (NIPS).2016

- **Solving Marginal MAP Problems with NP Oracles and Parity Constraints**
Xue, Y., Li, Z., Ermon, S., Gomes, C. P., Selman, B., Lee, D. D., Sugiyama, M., Luxburg, U. V., Guyon, Garnett, R.
NEURAL INFORMATION PROCESSING SYSTEMS (NIPS).2016

- **Variational Bayes on Monte Carlo Steroids**
Grover, A., Ermon, S., Lee, D. D., Sugiyama, M., Luxburg, U. V., Guyon, Garnett, R.

NEURAL INFORMATION PROCESSING SYSTEMS (NIPS).2016

- **Learning Large-Scale Dynamic Discrete Choice Models of Spatio-Temporal Preferences with Application to Migratory Pastoralism in East Africa**
  Ermon, S., Xue, Y., Toth, R., Dilkina, B., Bernstein, R., Damoulas, T., Clark, P., DeGloria, S., Mude, A., Barrett, C., Gomes, C. P., AAAI
  ASSOC ADVANCEMENT ARTIFICIAL INTELLIGENCE.2015: 644-650

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