

Stanford



Percy Liang

Associate Professor of Computer Science and, by courtesy, of Statistics

CONTACT INFORMATION

- **Administrator**

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Bio

BIO

Percy Liang is an Associate Professor of Computer Science at Stanford University (B.S. from MIT, 2004; Ph.D. from UC Berkeley, 2011). His two research goals are (i) to make machine learning more robust, fair, and interpretable; and (ii) to make computers easier to communicate with through natural language. His awards include the Presidential Early Career Award for Scientists and Engineers (2019), IJCAI Computers and Thought Award (2016), an NSF CAREER Award (2016), a Sloan Research Fellowship (2015), and a Microsoft Research Faculty Fellowship (2014).

ACADEMIC APPOINTMENTS

- Associate Professor, Computer Science
- Associate Professor (By courtesy), Statistics
- Faculty Affiliate, Institute for Human-Centered Artificial Intelligence (HAI)

PROFESSIONAL EDUCATION

- BS, MIT (2004)
- MEng, MIT (2005)
- PhD, UC Berkeley (2011)

Teaching

COURSES

2022-23

- Artificial Intelligence: Principles and Techniques: CS 221 (Aut)

2021-22

- Artificial Intelligence: Principles and Techniques: CS 221 (Aut)
- Understanding and Developing Large Language Models: CS 324 (Win)

2020-21

- Artificial Intelligence: Principles and Techniques: CS 221 (Aut)

2019-20

- Artificial Intelligence: Principles and Techniques: CS 221 (Aut)
- Artificial Intelligence: Principles and Techniques: OSPKYOTO 221K (Aut)

STANFORD ADVISEES

Doctoral Dissertation Reader (AC)

Dor Arad, Albert Gu, Weihua Hu

Postdoctoral Faculty Sponsor

John Thickstun, Dimitrios Tsipras

Orals Evaluator

Weihua Hu

Master's Program Advisor

Soumya Chatterjee, Ryan Chi, Yuzu Ido, Simrin Kalkat, Kantapong Kotchum, Gabe Mudel, Erich Trieschman, Tathagat Verma, Rajan Vivek, Hong Nhu Ngoc Vo, Regina Wang, Anthony Weng, Christopher Wong, Riley Yang, David Yin, Eva Yu, Clara Zou

Doctoral Dissertation Co-Advisor (AC)

John Hewitt, Siddharth Karamcheti, Rohith Kudtipudi, Ananya Kumar, Dieterich Lawson, Joon Park

Doctoral (Program)

Rishi Bommasani, Steven Cao, Yann Dubois, Qian Huang, Mina Lee, Lisa Li, Nelson Liu, Shiori Sagawa, Michael Xie, Michihiro Yasunaga

Postdoctoral Research Mentor

Niladri Chatterji

Publications

PUBLICATIONS

- **Stronger data poisoning attacks break data sanitization defenses** *MACHINE LEARNING*
Koh, P., Steinhardt, J., Liang, P.
2021
- **WILDS: A Benchmark of in-the-Wild Distribution Shifts**
Koh, P., Sagawa, S., Marklund, H., Xie, S., Zhang, M., Balsubramani, A., Hu, W., Yasunaga, M., Phillips, R., Gao, I., Lee, T., David, E., Stavness, et al
JMLR-JOURNAL MACHINE LEARNING RESEARCH.2021
- **Beyond IID: Three Levels of Generalization for Question Answering on Knowledge Bases**
Gu, Y., Kase, S., Vanni, M. T., Sadler, B. M., Liang, P., Yan, X., Su, Y., ACM
ASSOC COMPUTING MACHINERY.2021: 3477-3488
- **Prefix-Tuning: Optimizing Continuous Prompts for Generation**
Li, X., Liang, P., Assoc Computat Linguist
ASSOC COMPUTATIONAL LINGUISTICS-ACL.2021: 4582-4597
- **Decoupling Exploration and Exploitation for Meta-Reinforcement Learning without Sacrifices**
Liu, E., Raghunathan, A., Liang, P., Finn, C., Meila, M., Zhang, T.
JMLR-JOURNAL MACHINE LEARNING RESEARCH.2021
- **Just Train Twice: Improving Group Robustness without Training Group Information**
Liu, E., Haghgoo, B., Chen, A. S., Raghunathan, A., Koh, P., Sagawa, S., Liang, P., Finn, C., Meila, M., Zhang, T.

JMLR-JOURNAL MACHINE LEARNING RESEARCH.2021

- **Catformer: Designing Stable Transformers via Sensitivity Analysis**
Davis, J., Gu, A., Choromanski, K., Dao, T., Re, C., Finn, C., Liang, P., Meila, M., Zhang, T.
JMLR-JOURNAL MACHINE LEARNING RESEARCH.2021
- **Robust Encodings: A Framework for Combating Adversarial Typos**
Jones, E., Jia, R., Raghunathan, A., Liang, P., Assoc Computat Linguist
ASSOC COMPUTATIONAL LINGUISTICS-ACL.2020: 2752–65
- **Concept Bottleneck Models**
Koh, P., Nguyen, T., Tang, Y., Mussmann, S., Pierson, E., Kim, B., Liang, P., Daume, H., Singh, A.
JMLR-JOURNAL MACHINE LEARNING RESEARCH.2020
- **Understanding Self-Training for Gradual Domain Adaptation**
Kumar, A., Ma, T., Liang, P., Daume, H., Singh, A.
JMLR-JOURNAL MACHINE LEARNING RESEARCH.2020
- **Feature Noise Induces Loss Discrepancy Across Groups**
Khani, F., Liang, P., Daume, H., Singh, A.
JMLR-JOURNAL MACHINE LEARNING RESEARCH.2020
- **A Tight Analysis of Greedy Yields Subexponential Time Approximation for Uniform Decision Tree**
Li, R., Liang, P., Mussmann, S., ACM
ASSOC COMPUTING MACHINERY.2020: 102–21
- **Enabling Language Models to Fill in the Blanks**
Donahue, C., Lee, M., Liang, P., Assoc Computat Linguist
ASSOC COMPUTATIONAL LINGUISTICS-ACL.2020: 2492–2501
- **ExpBERT: Representation Engineering with Natural Language Explanations**
Murty, S., Koh, P., Liang, P., Assoc Computat Linguist
ASSOC COMPUTATIONAL LINGUISTICS-ACL.2020: 2106–13
- **Pretraining deep learning molecular representations for property prediction**
Liu, B., Hu, W., Leskovec, J., Liang, P., Pande, V.
AMER CHEMICAL SOC.2019
- **Inferring Multidimensional Rates of Aging from Cross-Sectional Data.** *Proceedings of machine learning research*
Pierson, E., Koh, P. W., Hashimoto, T., Koller, D., Leskovec, J., Eriksson, N., Liang, P.
2019; 89: 97–107
- **SPoC: Search-based Pseudocode to Code**
Kulal, S., Pasupat, P., Chandra, K., Lee, M., Padon, O., Aiken, A., Liang, P., Wallach, H., Larochelle, H., Beygelzimer, A., d'Alche-Buc, F., Fox, E., Garnett, et al
NEURAL INFORMATION PROCESSING SYSTEMS (NIPS).2019
- **Inferring Multidimensional Rates of Aging from Cross-Sectional Data**
Pierson, E., Koh, P., Hashimoto, T., Koller, D., Leskovec, J., Eriksson, N., Liang, P., Chaudhuri, K., Sugiyama, M.
MICROTOME PUBLISHING.2019: 97–107
- **Defending against Whitebox Adversarial Attacks via Randomized Discretization**
Zhang, Y., Liang, P., Chaudhuri, K., Sugiyama, M.
MICROTOME PUBLISHING.2019: 684–93
- **On the Accuracy of Influence Functions for Measuring Group Effects**
Koh, P., Ang, K., Teo, H. K., Liang, P., Wallach, H., Larochelle, H., Beygelzimer, A., d'Alche-Buc, F., Fox, E., Garnett, R.
NEURAL INFORMATION PROCESSING SYSTEMS (NIPS).2019
- **Verified Uncertainty Calibration**
Kumar, A., Liang, P., Ma, T., Wallach, H., Larochelle, H., Beygelzimer, A., d'Alche-Buc, F., Fox, E., Garnett, R.

NEURAL INFORMATION PROCESSING SYSTEMS (NIPS).2019

- **Unlabeled Data Improves Adversarial Robustness**
Carmon, Y., Raghuathan, A., Schmidt, L., Liang, P., Duchi, J. C., Wallach, H., Larochelle, H., Beygelzimer, A., d'Alche-Buc, F., Fox, E., Garnett, R.
NEURAL INFORMATION PROCESSING SYSTEMS (NIPS).2019
- **Training Classifiers with Natural Language Explanations.** *Proceedings of the conference. Association for Computational Linguistics. Meeting*
Hancock, B., Bringmann, M., Varma, P., Liang, P., Wang, S., Re, C.
2018; 2018: 1884–95
- **Active Learning of Points-To Specifications**
Bastani, O., Sharma, R., Aiken, A., Liang, P.
ASSOC COMPUTING MACHINERY.2018: 678–92
- **A Retrieve-and-Edit Framework for Predicting Structured Outputs**
Hashimoto, T. B., Guu, K., Oren, Y., Liang, P., Bengio, S., Wallach, H., Larochelle, H., Grauman, K., CesaBianchi, N., Garnett, R.
NEURAL INFORMATION PROCESSING SYSTEMS (NIPS).2018
- **Generalized Binary Search For Split-Neighborly Problems**
Mussmann, S., Liang, P., Storkey, A., PerezCruz, F.
MICROTOME PUBLISHING.2018
- **Know What You Don't Know: Unanswerable Questions for SQuAD**
Rajpurkar, P., Jia, R., Liang, P., Gurevych, Miyao, Y.
ASSOC COMPUTATIONAL LINGUISTICS-ACL.2018: 784–89
- **Training Classifiers with Natural Language Explanations**
Hancock, B., Varma, P., Wang, S., Bringmann, M., Liang, P., Re, C., Gurevych, Miyao, Y.
ASSOC COMPUTATIONAL LINGUISTICS-ACL.2018: 1884–95
- **The price of debiasing automatic metrics in natural language evaluation**
Chaganty, A., Mussmann, S., Liang, P., Gurevych, Miyao, Y.
ASSOC COMPUTATIONAL LINGUISTICS-ACL.2018: 643–53
- **Prediction with a Short Memory**
Sharan, V., Kakade, S., Liang, P., Valiant, G., Diakonikolas, Kempe, D., Henzinger, M.
ASSOC COMPUTING MACHINERY.2018: 1074–87
- **Uncertainty Sampling is Preconditioned Stochastic Gradient Descent on Zero-One Loss**
Mussmann, S., Liang, P., Bengio, S., Wallach, H., Larochelle, H., Grauman, K., CesaBianchi, N., Garnett, R.
NEURAL INFORMATION PROCESSING SYSTEMS (NIPS).2018
- **Semidefinite relaxations for certifying robustness to adversarial examples**
Raghuathan, A., Steinhart, J., Liang, P., Bengio, S., Wallach, H., Larochelle, H., Grauman, K., CesaBianchi, N., Garnett, R.
NEURAL INFORMATION PROCESSING SYSTEMS (NIPS).2018
- **Synthesizing Program Input Grammars**
Bastani, O., Sharma, R., Aiken, A., Liang, P.
ASSOC COMPUTING MACHINERY.2017: 95–110
- **Unsupervised Transformation Learning via Convex Relaxations**
Hashimoto, T. B., Duchi, J. C., Liang, P., Guyon, Luxburg, U. V., Bengio, S., Wallach, H., Fergus, R., Vishwanathan, S., Garnett, R.
NEURAL INFORMATION PROCESSING SYSTEMS (NIPS).2017
- **From Language to Programs: Bridging Reinforcement Learning and Maximum Marginal Likelihood**
Guu, K., Pasupat, P., Liu, E., Liang, P., Barzilay, R., Kan, M. Y.
ASSOC COMPUTATIONAL LINGUISTICS-ACL.2017: 1051-1062
- **Learning Symmetric Collaborative Dialogue Agents with Dynamic Knowledge Graph Embeddings**
He, H., Balakrishnan, A., Eric, M., Liang, P., Barzilay, R., Kan, M. Y.

ASSOC COMPUTATIONAL LINGUISTICS-ACL.2017: 1766-1776

- **Naturalizing a Programming Language via Interactive Learning**

Wang, S. I., Ginn, S., Liang, P., Manning, C. D., Barzilay, R., Kan, M. Y.
ASSOC COMPUTATIONAL LINGUISTICS-ACL.2017: 929-38

- **Certified Defenses for Data Poisoning Attacks**

Steinhardt, J., Koh, P., Liang, P., Guyon, Luxburg, U. V., Bengio, S., Wallach, H., Fergus, R., Vishwanathan, S., Garnett, R.
NEURAL INFORMATION PROCESSING SYSTEMS (NIPS).2017

- **Learning Overcomplete HMMs**

Sharan, V., Kakade, S., Liang, P., Valiant, G., Guyon, Luxburg, U. V., Bengio, S., Wallach, H., Fergus, R., Vishwanathan, S., Garnett, R.
NEURAL INFORMATION PROCESSING SYSTEMS (NIPS).2017

- **Learning Executable Semantic Parsers for Natural Language Understanding** *COMMUNICATIONS OF THE ACM*

Liang, P.
2016; 59 (9): 68-76

- **Learning Language Games through Interaction**

Wang, S. I., Liang, P., Manning, C. D., Erk, K., Smith, N. A.
ASSOC COMPUTATIONAL LINGUISTICS-ACL.2016: 2368-78

- **How Much is 131 Million Dollars? Putting Numbers in Perspective with Compositional Descriptions**

Chaganty, A., Liang, P., Erk, K., Smith, N. A.
ASSOC COMPUTATIONAL LINGUISTICS-ACL.2016: 578-587

- **Data Recombination for Neural Semantic Parsing**

Jia, R., Liang, P., Erk, K., Smith, N. A.
ASSOC COMPUTATIONAL LINGUISTICS-ACL.2016: 12-22

- **Unsupervised Risk Estimation Using Only Conditional Independence Structure**

Steinhardt, J., Liang, P., Lee, D. D., Sugiyama, M., Luxburg, U. V., Guyon, Garnett, R.
NEURAL INFORMATION PROCESSING SYSTEMS (NIPS).2016

- **Simpler Context-Dependent Logical Forms via Model Projections**

Long, R., Pasupat, P., Liang, P., Erk, K., Smith, N. A.
ASSOC COMPUTATIONAL LINGUISTICS-ACL.2016: 1456-1465

- **Inferring Logical Forms From Denotations**

Pasupat, P., Liang, P., Erk, K., Smith, N. A.
ASSOC COMPUTATIONAL LINGUISTICS-ACL.2016: 23-32

- **Unanimous Prediction for 100% Precision with Application to Learning Semantic Mappings**

Khani, F., Rinard, M., Liang, P., Erk, K., Smith, N. A.
ASSOC COMPUTATIONAL LINGUISTICS-ACL.2016: 952-962

- **Data Augmentation via Levy Processes** *PERTURBATIONS, OPTIMIZATION, AND STATISTICS*

Wager, S., Fithian, W., Liang, P., Hazan, T., Papandreou, G., Tarlow, D.
2016: 343-373

- **Bringing Machine Learning and Compositional Semantics Together** *ANNUAL REVIEW OF LINGUISTICS, VOL 1*

Liang, P., Potts, C.
2015; 1: 355-376

- **Tensor Factorization via Matrix Factorization**

Kuleshov, V., Chaganty, A., Liang, P., Lebanon, G., Vishwanathan, S. V.
MICROTOME PUBLISHING.2015: 507-516

- **Learning Where to Sample in Structured Prediction**

Shi, T., Steinhardt, J., Liang, P., Lebanon, G., Vishwanathan, S. V.

MICROTOME PUBLISHING.2015: 875-884

- **Environment-Driven Lexicon Induction for High-Level Instructions**
Misra, D. K., Tao, K., Liang, P., Saxena, A., Zong, C., Strube, M.
ASSOC COMPUTATIONAL LINGUISTICS-ACL.2015: 992-1002
- **Building a Semantic Parser Overnight**
Wang, Y., Berant, J., Liang, P., Zong, C., Strube, M.
ASSOC COMPUTATIONAL LINGUISTICS-ACL.2015: 1332-1342
- **Compositional Semantic Parsing on Semi-Structured Tables**
Pasupat, P., Liang, P., Zong, C., Strube, M.
ASSOC COMPUTATIONAL LINGUISTICS-ACL.2015: 1470-1480
- **Learning with Relaxed Supervision**
Steinhardt, J., Liang, P., Cortes, C., Lawrence, N. D., Lee, D. D., Sugiyama, M., Garnett, R.
NEURAL INFORMATION PROCESSING SYSTEMS (NIPS).2015
- **Calibrated Structured Prediction**
Kuleshov, V., Liang, P., Cortes, C., Lawrence, N. D., Lee, D. D., Sugiyama, M., Garnett, R.
NEURAL INFORMATION PROCESSING SYSTEMS (NIPS).2015
- **Estimating Mixture Models via Mixtures of Polynomials**
Wang, S. I., Chaganty, A., Liang, P., Cortes, C., Lawrence, N. D., Lee, D. D., Sugiyama, M., Garnett, R.
NEURAL INFORMATION PROCESSING SYSTEMS (NIPS).2015
- **On-the-Job Learning with Bayesian Decision Theory**
Werling, K., Chaganty, A., Liang, P., Manning, C. D., Cortes, C., Lawrence, N. D., Lee, D. D., Sugiyama, M., Garnett, R.
NEURAL INFORMATION PROCESSING SYSTEMS (NIPS).2015
- **Linking People in Videos with "Their" Names Using Coreference Resolution** *13th European Conference on Computer Vision (ECCV)*
Ramanathan, V., Joulin, A., Liang, P., Li Fei-Fei, F. F.
SPRINGER INT PUBLISHING AG.2014: 95-110
- **Zero-shot Entity Extraction from Web Pages**
Pasupat, P., Liang, P., Toutanova, K., Wu, H.
ASSOC COMPUTATIONAL LINGUISTICS-ACL.2014: 391-401
- **Semantic Parsing via Paraphrasing**
Berant, J., Liang, P., Toutanova, K., Wu, H.
ASSOC COMPUTATIONAL LINGUISTICS-ACL.2014: 1415-1425
- **Altitude Training: Strong Bounds for Single-Layer Dropout**
Wager, S., Fithian, W., Wang, S., Liang, P., Ghahramani, Z., Welling, M., Cortes, C., Lawrence, N. D., Weinberger, K. Q.
NEURAL INFORMATION PROCESSING SYSTEMS (NIPS).2014
- **Simple MAP Inference via Low-Rank Relaxations**
Frostig, R., Wang, S., Liang, P., Manning, C. D., Ghahramani, Z., Welling, M., Cortes, C., Lawrence, N. D., Weinberger, K. Q.
NEURAL INFORMATION PROCESSING SYSTEMS (NIPS).2014
- **Feature noising for log-linear structured prediction.**
Wang, S., Wang, M., Wager, S., Liang, P., Manning, C.
2013
- **Video Event Understanding using Natural Language Descriptions** *IEEE International Conference on Computer Vision (ICCV)*
Ramanathan, V., Liang, P., Li Fei-Fei, F. F.
IEEE.2013: 905-912
- **A Data Driven Approach for Algebraic Loop Invariants** *22nd European Symposium on Programming (ESOP)*
Sharma, R., Gupta, S., Hariharan, B., Aiken, A., Liang, P., Nori, A. V.

SPRINGER-VERLAG BERLIN.2013: 574–592

- **A data driven approach for algebraic loop invariants.**
Sharma, R., Gupta, S., Hariharan, B., Aiken, A., Liang, P., Nori, Aditya, V.
2013
- **Spectral experts for estimating mixtures of linear regressions.**
Chaganty, A., Liang, P.
2013
- **Semantic parsing on Freebase from question-answer pairs.**
Berant, J., Chou, A., Frostig, R., Liang, P.
2013
- **Dropout training as adaptive regularization.**
Wager, S., Wang, S., Liang, P.
2013
- **Video event understanding using natural language descriptions.**
Ramanathan, V., Liang, P., Fei-Fei, L.
2013
- **Genome Editing of Human Embryonic Stem Cells and Induced Pluripotent Stem Cells With Zinc Finger Nucleases for Cellular Imaging** *CIRCULATION RESEARCH*
Wang, Y., Zhang, W. Y., Hu, S., Lan, F., Lee, A. S., Huber, B., Lisowski, L., Liang, P., Huang, M., de Almeida, P. E., Won, J. H., Sun, N., Robbins, et al
2012; 111 (12): 1494-?
- **Induced Pluripotent Stem Cells as a Disease Modeling and Drug Screening Platform** *JOURNAL OF CARDIOVASCULAR PHARMACOLOGY*
Ebert, A. D., Liang, P., Wu, J. C.
2012; 60 (4): 408-416
- **Modeling Pathogenesis in Familial Hypertrophic Cardiomyopathy Using Patient-Specific Induced Pluripotent Stem Cells** *Basic Cardiovascular Sciences Scientific Session*
Lan, F., Lee, A., Liang, P., Navarrete, E., Wang, L., Leng, H., Sanchez, V., Yen, M., Wang, Y., Nguyen, P., Sun, N., Abilez, O., Lewis, et al
LIPPINCOTT WILLIAMS & WILKINS.2012
- **Identifiability and unmixing of latent parse trees.**
Hsu, D., Kakade, Sham, M., Liang, P.
2012
- **Learning dependency-based compositional semantics.**
Liang, P., Jordan, Michael, I., Klein, D.
2011
- **Learning minimal abstractions.**
Liang, P., Tripp, O., Naik, M.
2011
- **Scaling up abstraction refinement via pruning.**
Liang, P., Naik, M.
2011
- **A dynamic evaluation of static heap abstractions.**
Liang, P., Tripp, O., Naik, M., Sagiv, M.
2010
- **Learning programs: a hierarchical Bayesian approach.**
Liang, P., Jordan, Michael, I., Klein, D.
2010
- **A game-theoretic approach to generating spatial descriptions.**

- Golland, D., Liang, P., Klein, D.
2010
- **Type-based MCMC.**
Liang, P., Jordan, Michael, I., Klein, D.
2010
 - **A simple domain-independent probabilistic approach to generation.**
Angeli, G., Liang, P., Klein, D.
2010
 - **On the interaction between norm and dimensionality: multiple regimes in learning.**
Liang, P., Srebro, N.
2010
 - **Learning from measurements in exponential families.**
Liang, P., Jordan, Michael, I., Klein, D.
2009
 - **Learning semantic correspondences with less supervision.**
Liang, P., Jordan, Michael, I., Klein, D.
2009
 - **Probabilistic grammars and hierarchical Dirichlet processes.** *The Oxford Handbook of Applied Bayesian Analysis*
Liang, P., Jordan, Michael, I., Klein, D.
2009
 - **Online EM for unsupervised models.**
Liang, P., Klein, D.
2009
 - **Asymptotically optimal regularization in smooth parametric models.**
Liang, P., Bach, F., Bouchard, G., Jordan, Michael, I.
2009
 - **Optimal team size and monitoring in organizations** *ACCOUNTING REVIEW*
Liang, P. J., Rajan, M. V., Ray, K.
2008; 83 (3): 789-822
 - **A probabilistic approach to language change.**
Bouchard-Côté, A., Liang, P., Griffiths, T., Klein, D.
2008
 - **Agreement-based learning.**
Liang, P., Klein, D., Jordan, Michael, I.
2008
 - **Learning bilingual lexicons from monolingual corpora.**
Haghighi, A., Liang, P., Berg-Kirkpatrick, T., Klein, D.
2008
 - **Structure compilation: trading structure for features.**
Liang, P., Daume, H., Klein, D.
2008
 - **Analyzing the errors of unsupervised learning.**
Liang, P., Klein, D.
2008
 - **An asymptotic analysis of generative, discriminative, and pseudolikelihood estimators.**
Liang, P., Jordan, Michael, I.

2008

- **A probabilistic approach to diachronic phonology.**

Bouchard-Côté, A., Liang, P., Griffiths, T., Klein, D.

2007

- **A permutation-augmented sampler for Dirichlet process mixture models.**

Liang, P., Jordan, Michael, I., Taskar, B.

2007

- **Structured Bayesian nonparametric models with variational inference (tutorial).**

Liang, P., Klein, D.

2007

- **The infinite PCFG using hierarchical Dirichlet processes.**

Liang, P., Petrov, S., Jordan, Michael, I., Klein, D.

2007

- **An end-to-end discriminative approach to machine translation.**

Liang, P., Bouchard-Côté, A., Klein, D., Taskar, B.

2006

- **Alignment by agreement.**

Liang, P., Taskar, B., Klein, D.

2006

- **Linear programming in bounded tree-width Markov networks.**

Liang, P., Srebro, N.

2005

- **A data structure for maintaining acyclicity in hypergraphs.** *Massachusetts Institute of Technology Technical Report*

Liang, P., Srebro, N.

2005

- **Efficient geometric algorithms for parsing in two dimensions.**

Liang, P., Narasimhan, M., Shilman, M., Viola, P.

2005

- **Methods and experiments with bounded tree-width Markov networks.** *Massachusetts Institute of Technology Technical Report*

Liang, P., Srebro, N.

2004

- **How much of a hypertree can be captured by windmills?** *Massachusetts Institute of Technology Technical Report*

Liang, P., Srebro, N.

2003

- **INTERFEROMETRIC STUDIES OF THE JOVIAN ATMOSPHERIC PROBE FIELD**

Liang, P. Y., Prakash, S. G., Bershader, D.

AMER INST PHYSICS.1980: 1093-94

- **Saponins and sapogenins. III. The sapogenins obtained from chlorogalum pomeridianum** *JOURNAL OF THE AMERICAN CHEMICAL SOCIETY*

Liang, P., Noller, C. R.

1935; 57 (1): 525-527