



Percy Liang

Professor of Computer Science and Senior Fellow at the Stanford Institute for Human-Centered AI

CONTACT INFORMATION

- **Administrator**

Suzanne Lessard - Administrative Associate

Email slessard@stanford.edu

Tel (650) 723-6319

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) and the director of the Center for Research on Foundation Models (CRFM). He is currently focused on making foundation models (in particular, language models) more accessible through open-source and understandable through rigorous benchmarking. In the past, he has worked on many topics centered on machine learning and natural language processing, including robustness, interpretability, human interaction, learning theory, grounding, semantics, and reasoning. He is also a strong proponent of reproducibility through the creation of CodaLab Worksheets. 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), a Microsoft Research Faculty Fellowship (2014), and paper awards at ACL, EMNLP, ICML, COLT, ISMIR, CHI, UIST, and RSS.

ACADEMIC APPOINTMENTS

- Professor, Computer Science
- Senior Fellow, Institute for Human-Centered Artificial Intelligence (HAI)

PROFESSIONAL EDUCATION

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

Teaching

COURSES

2025-26

- Artificial Intelligence: Principles and Techniques: CS 221 (Aut)
- Language Modeling from Scratch: CS 336 (Spr)

2024-25

- Language Modeling from Scratch: CS 336 (Spr)

2023-24

- Artificial Intelligence: Principles and Techniques: CS 221 (Aut)
- Language Modeling from Scratch: CS 336 (Spr)

2022-23

- Advances in Foundation Models: CS 324 (Win)
- Artificial Intelligence: Principles and Techniques: CS 221 (Aut)

STANFORD ADVISEES

Doctoral Dissertation Reader (AC)

Mayee Chen

Postdoctoral Faculty Sponsor

Morris Yau

Orals Evaluator

Joey Hejna

Master's Program Advisor

Joseph Bailey, Sarah Chen, Sara Kothari, Collen Larson, Louise Li, Angela Liu, Romal Mittr, Yash Narayan, Lena Panova, Chenyue Qian, Alexander Qu, Abhinav Ramaswamy, Mark Robinson, Ricky Rojas, Ramisa Roy, Elijah Schacter, Karthik Seetharaman, Ela Sigin, Silky Singh, Vedant Singh, George Song, Pratham Soni, Ryan Southward, Keshav Sriram, Khushbu Taneja, Duru Unsal, Aaron Villanueva, Josh Walensky, Yihan Wang, Kenaj Washington, Shinnosuke Yagi, Victoria Yan, Jerry Yin, Xiaowei Zeng, Andrew Zhang, Boyuan Zhang, Andy Zhu

Doctoral Dissertation Co-Advisor (AC)

Moo Kim, Rohith Kudithipudi, Marina Zhang

Doctoral (Program)

Ahmed Ahmed, Steven Cao, Suhas Kotha, Tanishq Kumar, Tony Lee, Ken Liu, Kaiyue Wen

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
edited by Meila, M., Zhang, T.
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.
edited by Meila, M., Zhang, T.
JMLR-JOURNAL MACHINE LEARNING RESEARCH.2021
- **Just Train Twice: Improving Group Robustness without Training Group Information**
Liu, E., Haghighi, B., Chen, A. S., Raghunathan, A., Koh, P., Sagawa, S., Liang, P., Finn, C.
edited by 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.
edited by 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.
edited by Daume, H., Singh, A.
JMLR-JOURNAL MACHINE LEARNING RESEARCH.2020
- **Understanding Self-Training for Gradual Domain Adaptation**
Kumar, A., Ma, T., Liang, P.
edited by Daume, H., Singh, A.
JMLR-JOURNAL MACHINE LEARNING RESEARCH.2020
- **Feature Noise Induces Loss Discrepancy Across Groups**
Khani, F., Liang, P.
edited by 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.
edited by Wallach, H., Larochelle, H., Beygelzimer, A., d'Alche-Buc, F., Fox, E., Garnett, R.
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.
edited by Chaudhuri, K., Sugiyama, M.
MICROTOME PUBLISHING.2019: 97–107
- **Defending against Whitebox Adversarial Attacks via Randomized Discretization**
Zhang, Y., Liang, P.
edited by 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. H. K., Liang, P.
edited by 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.
edited by 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., Raghunathan, A., Schmidt, L., Liang, P., Duchi, J. C.
edited by 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.
edited by 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.
edited by Storkey, A., PerezCruz, F.
MICROTOME PUBLISHING.2018
- **Know What You Don't Know: Unanswerable Questions for SQuAD**
Rajpurkar, P., Jia, R., Liang, P.
edited by 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.
edited by 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.
edited by Gurevych, Miyao, Y.
ASSOC COMPUTATIONAL LINGUISTICS-ACL.2018: 643–53

- **Prediction with a Short Memory**
Sharan, V., Kakade, S., Liang, P., Valiant, G.
edited by 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.
edited by 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**
Raghunathan, A., Steinhardt, J., Liang, P.
edited by 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.
edited by 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.
edited by 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.
edited by 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.
edited by Barzilay, R., Kan, M. Y.
ASSOC COMPUTATIONAL LINGUISTICS-ACL.2017: 929–38
- **Certified Defenses for Data Poisoning Attacks**
Steinhardt, J., Koh, P., Liang, P.
edited by 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.
edited by 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.
edited by 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.
edited by Erk, K., Smith, N. A.
ASSOC COMPUTATIONAL LINGUISTICS-ACL.2016: 578-587
- **Data Recombination for Neural Semantic Parsing**
Jia, R., Liang, P.
edited by Erk, K., Smith, N. A.
ASSOC COMPUTATIONAL LINGUISTICS-ACL.2016: 12-22
- **Unsupervised Risk Estimation Using Only Conditional Independence Structure**
Steinhardt, J., Liang, P.
edited by 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.
edited by Erk, K., Smith, N. A.
ASSOC COMPUTATIONAL LINGUISTICS-ACL.2016: 1456-1465
- **Inferring Logical Forms From Denotations**
Pasupat, P., Liang, P.
edited by 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.
edited by 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.
edited by 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.
edited by Lebanon, G., Vishwanathan, S. V.
MICROTOME PUBLISHING.2015: 507-516
- **Learning Where to Sample in Structured Prediction**
Shi, T., Steinhardt, J., Liang, P.
edited by 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.
edited by Zong, C., Strube, M.
ASSOC COMPUTATIONAL LINGUISTICS-ACL.2015: 992-1002
- **Building a Semantic Parser Overnight**
Wang, Y., Berant, J., Liang, P.
edited by Zong, C., Strube, M.
ASSOC COMPUTATIONAL LINGUISTICS-ACL.2015: 1332-1342

- **Compositional Semantic Parsing on Semi-Structured Tables**
Pasupat, P., Liang, P.
edited by Zong, C., Strube, M.
ASSOC COMPUTATIONAL LINGUISTICS-ACL.2015: 1470-1480
- **Learning with Relaxed Supervision**
Steinhardt, J., Liang, P.
edited by 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.
edited by 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.
edited by 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.
edited by 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.
edited by Toutanova, K., Wu, H.
ASSOC COMPUTATIONAL LINGUISTICS-ACL.2014: 391-401
- **Semantic Parsing via Paraphrasing**
Berant, J., Liang, P.
edited by 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.
edited by 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.
edited by 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