

Curriculum Vitae

Fei Sha

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Education

Ph.D

Computer and Information Science (2007)
University of Pennsylvania (Philadelphia, PA)

Thesis: Large margin training of acoustic models for speech recognition

Thesis advisor: [Prof. Lawrence K. Saul](#)

Thesis committee:

[Prof. Fernando C. N. Pereira \(Chair\)](#)
[Prof. Sam Roweis \(External member\)](#)
[Prof. Mitch Marcus](#)
[Prof. Daniel D. Lee](#)

M.Sc.

Biomedical Engineering (1993)
Southeast University (Nanjing, China)

Thesis: A mathematical analysis of nonlinear dynamics in coupled neural oscillators

Thesis advisor: Prof. Yu Wei

B.Sc

Biomedical Engineering (1990)
Southeast University (Nanjing, China)

Thesis: A hybrid neural network architecture of Hopfield associative memory and back-propagation nets

Thesis advisor: [Prof. Qiang Gan](#) and Prof. Yu Wei

Academic Appointments and Other Professional Experiences

Jan. 17 – present

Associate Professor
Dept. of Computer Science
University of Southern California
Los Angeles, California

Jan. 16 – Dec. 16

Associate Professor
Samueli Fellow
Dept. of Computer Science
University of California
Los Angeles, California

Apr., 13 – Dec., 15

Jack Munushian Early Career Chair
Dept. of Computer Science
University of Southern California
Los Angeles, California

Mar., 14 – Dec., 15

Associate Professor (with tenure)
Dept. of Computer Science
University of Southern California
Los Angeles, California

Aug., 08 – Mar. 14

Assistant Professor
Dept. of Computer Science
University of Southern California
Los Angeles, California

Aug., 07 – Jul., 08

Research Scientist
Yahoo! Research
701 First Av.
Sunnyvale, California 94089

Aug., 06 – Jul., 07

Postdoc Research Associate

Computer Science Division
University of California
Berkeley, California

Mentors: [Prof. Michael I. Jordan](#), and [Prof. Stuart Russell](#)

Jan., 02 – Jul., 06

Graduate Research Assistant
Dept. of Computer and Information Science
University of Pennsylvania
Philadelphia, PA

Advisors: Prof. Fernando C. N. Pereira, and Prof. Lawrence K. Saul

Oct., 96 – Dec., 01

Senior System Analyst
MossRehab Hospital
Philadelphia, PA

Awards and Honors

- 2016** Google Research Award
- 2013** Sloan Research Fellow
Alfred P. Sloan Foundation
Invited contribution to *Comm. of ACM*
- 2012** Young Investigator Award
Army Research Office (ARO)
- 2010** Computer Science Study Panel
DARPA
- 2009** Google Research Award
- 2007** Finalist of the Best Student Paper
International Conference on Acoustics, Signal and Speech Processing
(ICASSP)
Co-author: Lawrence K. Saul
- 2006** Outstanding Student Paper
20th Annual Conference on Neural Information Processing Systems
(NIPS)
Co-author: Lawrence K. Saul
- 2004** Outstanding Student Paper
21th International Conference on Machine Learning (ICML)
Co-authors: Kilian Q. Weinberger and Lawrence K. Saul

Teaching Experience

U. of California (Los Angeles)

CS269 Advanced Topics in Machine Learning

U. of Southern California

CSCI599 Special Topics (Advanced Machine Learning)
Spring 2015

CSCI567 Machine Learning
Fall 2014, Fall 2013, Fall 2012, Fall 2011, Fall 2010, and Fall 2009

CSCI573 Probabilistic Reasoning (Probabilistic Graphical Models)
Spring 2014, Spring 2012, and Spring 2010

CS599 Selected Topics in Machine Learning
Spring 2009

U. of California (Berkeley)

Guest lecturer for CS 294 Practical Machine Learning
Fall 2007, Fall 2006

U. of Pennsylvania

TA for CS101 Programming Languages and Techniques (Spring 2003)

TA for CS520 Introduction to Artificial Intelligence (Fall 2002)

University Service

Departmental Committee Services

CS PhD Curriculum Standing Committee, 2015
CS Research Assistant Professor Promotion Committee, 2015
CS Junior Faculty (Prof. Anonymous) Mid-term Review Committee, 2015
CS PhD Admission and Fellowship Committee (Chair), 2013
CS PhD Program Reboot Committee, 2013
CS Fellowship and Graduate Admission Committee, 2013-2014
CS Faculty Search Committee, 2010-2011, 2012-2013
CS Colloquium Co-Organizers 2008-2009, 2009-2010
Faculty Evaluation Committee 2009, 2010
Ph.D Admission Committee 2008-2012

Professional Service

Workshop co-chair

International Conference on Machine Learning (2016)

Publication co-chair

International Conference on Machine Learning (2013, 2014)

Area Chair

International Conference for Machine Learning
2016, 2015, 2014, 2013, 2011, 2009

Neural Information Processing Systems
2016, 2012, 2008, 2007

AISTATS
2013

NAACL Human Language Technologies
2012

Associate Editor

IEEE Trans. on Pattern Analysis and Machine Intelligence (PAMI)
2014 – present

Journal of Artificial Intelligence Research
2013 — present

Editorial Board

Journal of Artificial Intelligence Research
2011 — 2014

Journal of Machine Learning Research
2009 – present

Machine Learning Journal
2010 – 2013

Workshop Co-organizer

ICCV 2013 Workshop on Visual Domain Adaptation and Dataset Bias
(Sydney, Australia)

AAAI 2013 Spring Symposium on Lifelong Learning (Palo Alto, CA)

NIPS 2010 Workshop on Challenges for Data Visualization (Whistler,
Canada)

NIPS Workshop on Statistical Learning for Visual Analytics (Whistler, Canada)

NIPS 2007 Workshop on Machine Learning and Systems (Whistler, Canada)

Recent Program Committees and Review Services

ECCV 2014 Workshop on Transferring and Adapting Source Knowledge in Computer Vision (TASK-CV)

IEEE BigData 2013

EMNLP 2012

ICML 2012

AISTATS 2011

IJCAI 2011

AAAI 2010 Manifold Learning Symposium

ICDM Workshop on Optimization Based Methods for Emerging Data Mining Problems (OEDM'09), Miami, Florida

SIGMETRICS Workshop Learning for Networking 2009, Seattle, Washington

12th International Conference on Artificial Intelligence and Statistics (AISTATS 2009), Clearwater Beach, Florida

Others

NSF Panelists (2009 - present)

Reviewer for Foundation and Trends in Machine Learning, Neural Computation, IEEE Transaction journals, J. of ACM, NIPS, AISTATS and ICML conferences and etc.

Publication

arXiv public author identifier: http://arxiv.org/a/sha_f_1

Book chapters

- [B1] Fei Sha and Lawrence K. Saul. Large margin training of acoustic models for phoneme classification and recognition. In Joseph Keshet and Samy Bengio, editors, *Large Margin and Kernel Approaches to Speech and Speaker Recognition*, chapter 8. Wiley & Sons, 2008.
- [B2] Lawrence K. Saul, Kilian Q. Weinberger, Fei Sha, Jihun Hamm, and Daniel D. Lee. Spectral methods for dimensionality reduction. In Olivier Chapelle, Bernhard Schölkopf, and Alexander Zien, editors, *Semi-supervised Learning*, chapter 16, pages 293–308. MIT Press, Cambridge, MA, 2006.

Journal

- [J1] Minmin Chen, Kilian Weinberger, Zhixiang Xu, and Fei Sha. Marginalizing stacked linear denoising autoencoders. *J. of Mach. Learn. Res.*, 2015.
- [J2] Boqing Gong, Kristen Grauman, and Fei Sha. Learning kernels for unsupervised domain adaptation with applications to visual object recognition. *Int. J. of Computer Vision*, 109:3–27, 2014.
- [J3] Junping Zhang, Ben Tan, Fei Sha, and Li He. Predicting pedestrian counts in crowded scenes with rich and high-dimensional features. *IEEE Trans. on Intelligent Transportation Systems*, 12(4):1037–1046, 2011.
- [J4] Chih-chieh Cheng, Fei Sha, and Lawrence K. Saul. Online learning and acoustic feature adaptation in large margin hidden Markov models. *IEEE J. of Special Topics in Signal Processing*, 4(6):926–942, 2010.
- [J5] Sriram Sankararaman, Fei Sha, Jack F. Kirsch, Michael I. Jordan, and Kimmen Sjölander. Active site prediction using evolutionary and structural information. *Bioinformatics*, 26(5):617–624, 2010.
- [J6] Fei Sha, Yuanqing Lin, Lawrence K. Saul, and Daniel D. Lee. Multiplicative updates for nonnegative quadratic programming. *Neural Computation*, 19(8):2004–2031, 2007.

Conferences

- [C1] Ke Zhang, Weilun Chao, Fei Sha, and Kristen Grauman. Video summarization with long short-term memory. In *Proc. of ECCV*, 2016.

- [C2] Weilun Chao, Soravit Changpinyo, Boqing Gong, and Fei Sha. An empirical study and analysis of generalized zero-shot learning for object recognition in the wild. In *Proc. of ECCV*, 2016.
- [C3] Soravit Changpinyo, Weilun Chao, Boqing Gong, and Fei Sha. Synthesized classifiers for zero-shot learning. In *Proc. of CVPR*, 2016.
- [C4] Ke Zhang, Weilun Chao, Fei Sha, and Kristen Grauman. Summary transfer: Exemplar-based subset selection for video summarization. In *Proc. of CVPR*, 2016.
- [C5] Yuan Shi, Wenzhe Li, and Fei Sha. Ordinal metric learning. In *Proc. of AAAI*, 2016.
- [C6] Zhiyun Lu, Dong Guo, Alireza Bagheri Garakani, Kuan Liu, Avner May, Aurélien Bellet, Linxi Fan, Michael Collins, Brian Kingsbury, Michael Picheny, and Fei Sha. A comparison between deep neural nets and kernel acoustic models for speech recognition. In *Proc. of ICASSP*, 2016.
- [C7] Weilun Chao, Boqing Gong, Kristen Grauman, and Fei Sha. Large-margin determinantal point processes. In *Proc. of Uncertainty in AI (UAI)*, 2015.
- [C8] Weilun Chao, Justin Solomon, Dominik L. Michels, and Fei Sha. Exponential integration for Hamiltonian Monte Carlo. In *Proc. of Int. Conf. on Mach. Learn.*, 2015.
- [C9] Kuan Liu, Aurélien Bellet, and Fei Sha. Similarity learning for high-dimensional sparse data. In *Proc. of Artificial Intelligence and Statistics (AISTATS)*, 2015.
- [C10] Aurélien Bellet, Yingyu Liang, Alireza Bagheri Garakani, Nina Balcon, and Fei Sha. Distributed Frank-Wolfe algorithm: A unified framework for communication-efficient sparse learning. In *Proc. of SIAM Intl. Conf. on Data Mining (SDM)*, 2015.
- [C11] Boqing Gong, Weilun Chao, Kristen Grauman, and Fei Sha. Diverse sequential subset selection for supervised video summarization. In *Proc. of Annual Conference on Neural Information Processing Systems (NIPS)*, 2014.
- [C12] Yuan Shi, Aurelien Bellet, and Fei Sha. Sparse compositional metric learning. In *Proceedings of Twenty-Eighth AAAI Conference (AAAI-14)*, 2014.
- [C13] Minmin Chen, Kilian Weinberger, Fei Sha, and Yoshua Bengio. Marginalized denoising auto-encoders for nonlinear representations. In *Proceedings of Int. Conf. on Machine Learning (ICML)*, 2014.
- [C14] Jun Wang, Ke Sun, Fei Sha, Stephane Marchand-Maillet, and Alexandros Kalousis. Two-stage metric learning. In *Proc. of Int. Conf. on Machine Learning (ICML)*, 2014.
- [C15] Dinesh Jayaraman, Fei Sha, and Kristen Grauman. Decorrelating semantic visual attributes by resisting the urge to share. In *Proc. IEEE Conf. on Computer Vision and Pattern Recognition (CVPR)*, Columbus, OH, 2014.

- [C16] Zi Wang and Fei Sha. Discriminative non-negative matrix factorization for single-channel speech separation. In *Proc. Int. Conf. on Acoustics, Speech and Signal Processing (ICASSP)*, Florence, Italy, 2014.
- [C17] Greg Ver Steeg, Aram Galstyan, Fei Sha, and Simon DeDeo. Demystifying information-theoretic clustering. In *Proc. of Int. Conf. on Machine Learning (ICML)*, Beijing, 2014.
- [C18] Boqing Gong, Kristen Grauman, and Fei Sha. Reshaping visual datasets for domain adaptation. In *Proc. of Annual Conference on Neural Information Processing Systems (NIPS)*, Lake Tahoe, CA, 2013.
- [C19] Soravit Changpinyo, Kuan Liu, and Fei Sha. Similarity component analysis. In *Proc. of Annual Conference on Neural Information Processing Systems (NIPS)*, 2013.
- [C20] Sungju Hwang, Kristen Grauman, and Fei Sha. Analogy-preserving semantic embedding for visual object categorization. In *Proceedings of ICML*, Atlanta, GA, 2013.
- [C21] Jaechul Kim, Ce Liu, Fei Sha, and Kristen Grauman. Deformable spatial pyramid matching for fast dense correspondences. In *CVPR*, Portland, OR, 2013.
- [C22] Boqing Gong, Kristen Grauman, and Fei Sha. Connecting the dots with landmarks: Discriminatively learning domain-invariant features for unsupervised domain adaptation. In *Proceedings of ICML*, Atlanta, GA, 2013.
- [C23] Dingchao Lu and Fei Sha. Likability prediction with Gaussian process. In *Proceedings of Interspeech*, Portland, OR, 2012.
- [C24] Dor Kedem, Stephen Tyree, Kilian Weinberger, Fei Sha, and Gert Lanckriet. Non-linear metric learning. In *Proceedings of Annual Conference on Neural Information Processing Systems (NIPS)*, Lake Tahoe, CA, 2012.
- [C25] Sungju Hwang, Kristen Grauman, and Fei Sha. Semantic kernel forests from multiple taxonomies. In *Proceedings of Annual Conference on Neural Information Processing Systems (NIPS)*, Lake Tahoe, CA, 2012.
- [C26] Zhixing Xu, Minmin Chen, Kilian Weinberger, and Fei Sha. From sBoW to dCoT marginalized encoders for text representation. In *Proceedings of ACM Conf. on Information and Knowledge Management (CIKM)*, Maui, HI, 2012.
- [C27] Bin Liu, Yurong Jiang, Fei Sha, and Ramesh Govindan. Cloud-enabled privacy-preserving collaborative learning for mobile sensing. In *Proc. of 10th ACM Conf. on Embedded Network Sensor Systems (SenSys 2012)*, Toronto, 2012.
- [C28] Minmin Chen, Zhixing Xu, Kilian Weinberger, and Fei Sha. Marginalized denoising autoencoders for domain adaptation. In *Proceedings of Intl. Conf. on Machine Learning (ICML)*, Edinburgh, 2012.

- [C29] Yuan Shi and Fei Sha. Information-theoretical learning of discriminative clusters for unsupervised domain adaptation. In *Proceedings of Intl. Conf. on Machine Learning (ICML)*, Edinburgh, 2012.
- [C30] Tomer Levinboim and Fei Sha. Learning the kernel matrix with low-rank multiplicative shaping. In *Proceedings of Twenty-Sixth AAAI Conference on Artificial Intelligence (AAAI)*, Toronto, 2012.
- [C31] Boqing Gong, Yuan Shi, Fei Sha, and Kristen Grauman. Geodesic flow kernel for unsupervised domain adaptation. In *Proceedings of IEEE Conf. on Computer Vision and Pattern Recognition (CVPR)*, Providence, Rhode Island, 2012.
- [C32] Sungju Hwang, Kristen Grauman, and Fei Sha. Learning a tree of metrics with disjoint visual features. In *Proceedings of Annual Conference on Neural Information Processing Systems (NIPS)*, Granada, Spain, 2011.
- [C33] Leslie Cheung, Leana Golubchik, and Fei Sha. A study of web services performance prediction: A client’s perspective. In *Proceedings of the 19th Annual Meetings of the IEEE International Symposium on Modeling, Analysis and Simulation of Computer and Telecommunications Systems (MASCOTS)*, Singapore, 2011.
- [C34] Zhuoliang Kang, Kristen Grauman, and Fei Sha. Learning with whom to share in multitask feature learning. In *Proceedings of International Conference on Machine Learning (ICML)*, Bellevue, WA, 2011.
- [C35] Sungju Hwang, Fei Sha, and Kristen Grauman. Sharing features between objects and their attributes. In *Proceedings of IEEE Conf. on Computer Vision and Pattern Recognition (CVPR)*, Colorado Springs, CO, 2011.
- [C36] Meihong Wang and Fei Sha. Information theoretical clustering via semidefinite programming. In *Proceedings of AISTATS*, Ft. Lauderdale, 2011.
- [C37] Matthew E. Taylor, Brian Kullis, and Fei Sha. Metric learning for reinforcement learning agents. In *Proceedings of the Tenth International Conference on Autonomous Agents and Multiagent Systems (AAMAS)*, Taipei, 2011.
- [C38] Meihong Wang, Fei Sha, and Michael I. Jordan. Unsupervised kernel dimension reduction. In *Proceedings of Neural Information Processing (NIPS)*, 2010.
- [C39] Dian Gong, Fei Sha, and Gerard Medioni. Locally linear denoising on image manifolds. In *Proceeding of Artificial Intelligence and Statistics (AISTATS) 2010*, 2010.
- [C40] Chih-Chieh Cheng, Fei Sha, and Lawrence K. Saul. Large margin feature adaptation for automatic speech recognition. In *Proceedings of the IEEE Workshop on Automatic Speech Recognition and Understanding (ASRU-09)*, Merano, Italy, 2009.
- [C41] Chih-Chieh Cheng, Fei Sha, and Lawrence K. Saul. A fast online algorithm for large margin training of continuous density hidden Markov models. In *Proceedings of 10th Annual Conference of the International Speech Communication Association (Interspeech 2009)*, Brighton, UK, 2009.

- [C42] Chih-Chieh Cheng, Fei Sha, and Lawrence K. Saul. Matrix updates for perceptron training of continuous density hidden Markov models. In *Proceedings of 26th International Conference of Machine Learning (ICML 2009)*, Montreal, Canada, 2009.
- [C43] Nilesh Dalvi, Philip Bohannon, and Fei Sha. Robust web extraction: an approach based on probabilistic tree-edit model. In *Proceedings of ACM SIGMOD 2009*, Providence, R.I., 2009.
- [C44] Simon LaCoste-Jullien, Fei Sha, and Michael I. Jordan. DiscLDA: Discriminative learning for dimensionality reduction and classification. In *Proceedings of Neural Information Processing Systems*, Vancouver, Canada, 2008.
- [C45] Andrea Frome, Yoram Singer, Fei Sha, and Jitendra Malik. Learning globally-consistent local distance functions for shape-based image retrieval and classification. In *Proceedings of IEEE Eleventh International Conference on Computer Vision (ICCV 2007)*, pages 1–8, Rio de Janeiro, Brazil, 2007.
- [C46] Jens Nilsson, Fei Sha, and Michael I. Jordan. Regression of data on manifold with kernel dimension reduction. In Zoubin Ghahramani, editor, *Proceedings of the Twenty-Forth Annual International Conference on Machine Learning (ICML 2007)*, pages 697–704, Corvallis, OR, 2007. Omnipress.
- [C47] Fei Sha, Yonghahk Park, and Lawrence Saul. Multiplicative updates for L_1 -regularized linear and logistic regression. In Michael R. Berthold, John Shawe-Taylor, and Nada Lavrac, editors, *Advances in Intelligent Data Analysis VII: Proceedings of Seventh International Symposium on Intelligent Data Analysis (IDA 2007)*, volume 4723 of *Lecture note in Computer Science*, pages 13–24, Ljubljana, Slovenia, 2007. Springer.
- [C48] Fei Sha and Lawrence K. Saul. Comparison of large margin training to other discriminative methods for phonetic recognition by hidden Markov models. In *Proceedings of IEEE International Conference on Acoustics, Speech and Signal Processing (ICASSP) 2007*, pages 313–316, Honolulu, HI, 2007.
- [C49] Fei Sha and Lawrence K. Saul. Large margin hidden Markov models for automatic speech recognition. In B. Schölkopf, J.C. Platt, and T. Hofmann, editors, *Advances in Neural Information Processing Systems 19*, pages 1249–1256, Cambridge, MA, 2007. MIT Press.
- [C50] Kilian Q. Weinberger, Fei Sha, Qihui Zhu, and Lawrence K. Saul. Graph regularization for maximum variance unfolding, with an application to sensor localization. In B. Schölkopf, J. C. Platt, and T. Hofmann, editors, *Advances in Neural Information Processing Systems 19*, pages 1489–1496. MIT Press, 2007.
- [C51] Fei Sha and Lawrence K. Saul. Large margin Gaussian mixture modeling for phonetic classification and recognition. In *Proceedings of IEEE International Conference on Acoustics, Speech and Signal Processing (ICASSP) 2006*, pages 265–268, Toulouse, France, 2006.

- [C52] Fei Sha and Lawrence K. Saul. Analysis and extension of spectral methods for nonlinear dimensionality reduction. In *Proceedings of the Twenty-second International Conference of Machine Learning (ICML 2005)*, pages 784–791, Bonn, Germany, 2005. ACM (New York, NY).
- [C53] Fei Sha and Lawrence Saul. Real-time pitch determination of one or more voices by nonnegative matrix factorization. In Lawrence K. Saul, Yair Weiss, and Léon Bottou, editors, *Advances in Neural Information Processing Systems 17*, pages 1233–1240. MIT Press, Cambridge, MA, 2005.
- [C54] Fei Sha, J. Ashley Burgoyne, and Lawrence K. Saul. Multiband statistical learning for f0 estimation in speech. In *Proceedings of the IEEE International Conference of Acoustics, Speech and Signal Processing (ICASSP)*, volume 5, pages 661–664, Montreal, Canada, 2004.
- [C55] Kilian Q. Weinberger, Fei Sha, and Lawrence K. Saul. Learning a kernel matrix for nonlinear dimensionality reduction. In *Proceedings of the Twenty First International Conference on Machine Learning (ICML 2004)*, pages 839–846, Banff, Canada, 2004.
- [C56] Fei Sha, Lawrence K. Saul, and Daniel D. Lee. Multiplicative updates for large margin classifiers. In Bernhard Schölkopf and Manfred Warmuth, editors, *Proceedings of the Sixteenth Annual Conference on Computational Learning Theory (COLT 2003)*, volume 2777 of *Lecture note in Artificial Intelligence*, pages 188–202, Washington D. C., 2003. Springer.
- [C57] Fei Sha and Fernando Pereira. Shallow parsing with conditional random fields. In *Proceedings of Human Language Technology-NAACL 2003*, pages 213–220, Edmonton, Canada, 2003.
- [C58] Fei Sha, Lawrence K. Saul, and Daniel D. Lee. Multiplicative updates for nonnegative quadratic programming in support vector machines. In S. Becker, S. Thrun, and K. Obermayer, editors, *Advances in Neural and Information Processing Systems 15*, volume 15, Cambridge, MA, 2003. MIT Press.
- [C59] Lawrence K. Saul, Fei Sha, and Daniel D. Lee. Statistical signal processing with nonnegativity constraints. In *Proceedings of the Eighth European Conference on Speech Communication and Technology (EuroSpeech 2003)*, pages 1001–1004, Geneva, Switzerland, 2003.

Peer-Reviewed Workshops

- [W1] Christian Potthast, Andreas Breitenmoser, Fei Sha, and Gaurav S. Sukhatme. Active multi-view object recognition and change detection. In *ICRA Workshop on Scaling Up Active Perception*, 2015.

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- [W2] Karol Hausman, Chet Corcos, Joerg Mueller, Fei Sha, and Gaurav Sukhatme. Towards interactive object recognition. In *Third Workshop on Robotics in Clutter: Perception and Interaction in Clutter*, 2015.
- [W3] Zhiyun Lu, Zi Wang, and Fei Sha. Fast learning with noise in deep neural nets. In *NIPS Workshop on Perturbations, Optimization, and Statistics*, Montreal, Canada, 2014.
- [W4] Franziska Meier, Amir Globerson, and Fei Sha. The more the merrier: Parameter learning for graphical models with multiple maps. In *ICML Workshop on Interaction between Inference and Learning*, Atlanta, GA, 2013.
- [W5] Boqing Gong, Fei Sha, and Kristen Grauman. Overcoming dataset bias: An unsupervised domain adaptation approach. In *NIPS Workshop on Big Vision*, Lake Tahoe, CA, 2012.
- [W6] Sungju Hwang, Kristen Grauman, and Fei Sha. Semantic kernel forests from multiple taxonomies. In *NIPS Workshop on Big Vision*, Lake Tahoe, CA, 2012.
- [W7] Sung Ju Hwang, Fei Sha, and Kristen Grauman. Sharing features between visual tasks at different levels of granularity. In *IEEE CVPR Workshop on Fine-Grained Visual Categorization*, Colorado Springs, CO, 2011.

Others

- [O1] Kilian Weinberger, Fei Sha, and Lawrence K. Saul. Convex optimizations for distance metric learning and pattern classification. *IEEE Signal Processing Magazine*, 2010.
- [O2] Fei Sha. *Large margin training of acoustic models for speech recognition*. PhD thesis, University of Pennsylvania, Philadelphia, PA, 2007.

Under Review

- [S1] Yuan Shi, Wenzhe Li, and Fei Sha. Ordinal metric learning, 2015.
- [S2] Caitlyn Clabaugh, Gisele Ragusa, Fei Sha, and Maja Matarić. Designing a socially assistive robot for personalized number concepts learning in preschool children, 2015.
- [S3] Caitlyn Clabaugh, Fei Sha, Gisele Ragusa, and Maja Matarić. Towards a personalized model of number concepts learning in preschool children, 2015.
- [S4] Zhiyun Lu, Avner May, Kuan Liu, Alireza Bagheri Garakani, Dong Guo, Aurélien Bellet, Linxi Fan, Michael Collins, Brian Kingsbury, Michael Picheny, and Fei Sha. How to scale up kernel methods to be as good as deep neural nets, 2015.

Tutorials

2013

Machine Learning
Uncertainty Quantification Summer School
U. of Southern California

Dimensionality Reduction
Computer Vision Summer School
Institute of Pure and Applied Mathematics (IPAM)
U. of California (Los Angeles)

2012

Domain Adaptation in Real-world Applications
Asian Conference on Machine Learning (ACML)
Singapore

Domain Adaptation in Machine Learning and Speech Processing
InterSpeech
Portland, OR

2010

Machine Learning for Visualization
IEEE Conference on InfoVis
Salt Lake City, UT

Invited Talks and Seminars

- 2016** *Can random features be as effective as deep learning features?*
Southern California Machine Learning Symposium
- TBA*
Interspeech 2016 Workshop on Machine Learning and Signal Processing
- TBA*
U. of Central Florida Computer Vision Research Center Colloquium
-
- 2015** *Can random features be as effective as deep learning features?*
NIPS Workshop on Feature Selection
- Large-scale Kernel Methods*
NIPS Workshop on Large-scale Nonparametric Methods
- Learning kernels for summarizing videos*
Institute for Advanced Study (IAS) Workshop on Functoriality in Geometric Data
Hong Kong University of Science and Technology
- Panel Talk and Discussions*
Schloss Dagstuhl Seminar on Machine Learning with Interdependent and Non-identically Distributed Data
Germany
-
- 2014** *Large-scale Kernel Methods for Acoustic Modeling*
Spoken Language Processing (SLT) 2014
South Lake Tahoe, NV
- Novel Methods for Learning to Cluster*
Information Systems Lab Seminar
Dept. of Electrical Engineering
Stanford University
- Novel Methods for Learning to Cluster*
SDM 2014 Workshop on Exploratory Data Analysis
Philadelphia, PA
- Similarity Component Analysis*
Information Theory and Application (ITA) 2014
San Diego, CA

Statistical Learning for Unsupervised Domain Adaptation
UIUC AI Seminar

2013

Learning Kernels for Unsupervised Domain Adaptation
NIPS 2013 Workshop on Transfer and Multi-task Learning
Lake Tahoe, CA

Statistical Learning for Unsupervised Domain Adaptation
Google Research (Mountain View)

Probabilistic Models for Learning Similarity
Dept. of Computer Science
U. of Texas (Austin)

Statistical Learning for Unsupervised Domain Adaptation
Max-Planck Institute for Intelligent Systems
Tübingen, Germany

Probabilistic Models for Learning Similarity
Google Research (New York)

Divergence on Probability Simplexes and Its Application to Metric Learning
ICML Workshop on Divergence and Divergence Learning
Atlanta, GA

Domain Adaptation for Learning in a Changing Environment
AI Seminar
Department of Computer Science and Engineering
Ohio State University

Statistical Learning for Unsupervised Domain Adaptation
Information Theory and Application Workshop (ITA)
San Diego, CA

2012

New Approaches for Nonlinear Dimensionality Reduction
SAMSI-FODAVA Workshop on Interactive Visualization and Analysis
of Massive Data
Statistical and Applied Mathematical Sciences Institute
Research Triangle Park, NC

*Online Algorithms for Exponential Family models, with Application to
Speech Processing*
NIPS Workshop on Log-linear Models
Lake Tahoe, CA

Domain Adaptation for Learning in a Changing Environment

Departmental Seminar
 Dept. of Statistics
 U. of California (Los Angeles)

Domain Adaptation for Learning in a Changing Environment
 AI Seminar
 Dept. of Computer Science
 Cornell University

Domain Adaptation for Learning in a Changing Environment
 Department Colloquium
 Dept. of Statistics
 U. of Southern California

Domain Adaptation for Learning in a Changing Environment
 Colloquium
 Center for Applied Mathematics
 U. of Waterloo

Domain Adaptation for Learning in a Changing Environment
 Department Colloquium
 Systems Engineering and Engineering Management
 Chinese University of Hong Kong

Learning the Kernel Matrix with Low-rank Multiplicative Shaping
 Information Theory and Application Workshop
 San Diego, CA

2011

Statistical Learning Algorithms for Discovering Hidden Structures in Data
 Departmental Colloquium
 Computer Science and Engineering
 Washington U.

Statistical Learning Algorithms for Discovering Hidden Structures in Data
 Colloquium
 Navy Center for Applied Research in Artificial Intelligent Colloquium

Statistical Learning Algorithms for Discovering Hidden Structures in Data
 Colloquium
 Department of Computational Science and Engineering
 Georgia Institute of Technology

Information-theoretical Clustering with Semidefinite Programming
 Information Theory and Application Workshop
 La Jolla, CA

Information Theoretical Clustering via Semidefinite Programming
AI Seminar
Center for Machine Learning and Intelligent Systems
U. of California (Irvine)

2010

Learning Low-Dimensional Representation: This Way, That Way and New Ways

AAAI Fall Symposium on Manifold Learning and Its Applications
Arlington, VA

How to Harvest Information from High dimension Data with Statistical Learning Techniques

Department Seminar
Department of Statistics
U. of California (Los Angeles)

Harvest Information from High Dimensional Data with Learning Techniques

MIT Lincoln Lab

Online Learning for Large-margin CD-HMMs

Special Session on Machine Learning in Speech Recognition
Acoustic Society of America 2010 Meeting Baltimore, MD

2009

How to Harvest Information from High dimension Data with Statistical Learning Techniques

CENS Seminar
Center for Embedded Networking Systems
U. of California (Los Angeles)

DiscLDA: Discriminative Learning for Dimensionality Reduction and Classification

Information Theory and Application Workshop
La Jolla, CA

Large-margin CD-HMMs

Visitor Seminar
Electrical Engineering Department
U. of California (Los Angeles)

2008 and earlier

Computer Science and Engineering Department, Fudan University
(Dec. 2008)

Computer Science Department, Nanjing University (Dec. 2008)

Microsoft Research Asia (Dec. 2008)

Google China (Dec. 2008)

AI Seminar, Information Science Institute (Jan., 2009)

NLP Seminar, Information Science Institute (Nov., 2008)

Interaction Lab Seminar, Computer Science Department, USC (Nov., 2008)

SAIL Seminar, Electrical Engineering Department, USC (Oct. 2008)

IRCS Seminar, Computer Science Department, USC (Sept. 2008)

AI Seminar, Department of Computer Science and Engineering, University of California San Diego (Nov., 2008)

Probabilistic Artificial Intelligence Luncheon, Computer Science Department, Stanford University (Nov., 2007)

NEC Research, Cupertino, CA (April, 2007)

Yahoo! Research, Santa Clara, CA (Mar., 2007)

Speech Group, IBM T. J. Watson Research Center (Mar., 2007)

SRI STAR Lab, Menlo Park, CA (Oct., 2006)

MIT EECS Seminar, Cambridge, MA (April, 2006)

NEC Labs, Princeton, NJ (March, 2006)

Siemens Corporate Research, Princeton, NJ (March, 2006)

Seminar, Dept. of Computer Science, Stony Brook University, (March, 2006)

Computational Linguistics Seminar, Univ. of Pennsylvania, (March, 2006)

Center for Intelligent Systems Seminar, Univ. of California, Berkeley, CA (March, 2006)

Microsoft Research, Redmond, WA (Feb., 2006)

Siemens Medical Solutions, Malvern, PA (Jan., 2006)

Google, New York (Dec., 2005).

NIPS Workshop of Advances in Structure Learning, Whistler, Canada (Dec., 2005).

CIAR Neural Computation and Adaptive Perception Workshop, Vancouver, Canada (Dec., 2005).

AT&T Labs, Florham Park, New Jersey (Nov., 2005)

Machine Learning Summer School, Toyota Technological Institute, Chicago (May 2005).

CIAR Neural Computation and Adaptive Perception Workshop, Montreal, Canada (April 2005).

Students and Postdocs

Former Postdoc

Aurélien Bellet. Feb. 2013 - July 2014 (now a tenured researcher at INRIA, Lille, France)

Current Funded Ph.D Students

Ke Zhang. Aug. 2014 - present (USC Viterbi Fellowship, Research Assistant)

Alireza Bagheri Garakani. Aug. 2013 - present (USC Viterbi Fellowship, Research Assistant)

Wei-lun Chao. Aug. 2013 - present (USC Viterbi Fellowship, Research Assistant)

Caitlyn Clabaugh. Aug. 2013 - present (Research Assistant, co-advising with Prof. Maja Matarić)

“Beer” Soravit Changpinyo. Aug. 2012 - present (USC Provost Fellowship, Research Assistant)

Zhiyun Lu. Jan. 2014 - present (Research Assistant)

Visiting Students/Internships

Jan Kremer. Sept 2015 - Dec 2015 (U. of Copenhagen PhD student)

Dong Guo. Aug. 2013 - present (USC PhD student)

Zi Wang. Feb. 2014 - May 2014 (Tsinghua undergraduate student)

Kun Fu. Dec 2014 - June 2015 (Tsinghua Graduate Student)

Junqi Ji. Dec 2014 - June 2015 (Tsinghua Graduate Student)

Former Students

Boqing Gong. Aug. 2011 - June 2015 (USC Viterbi Fellowship, Research Assistant, now an assistant professor at U. of Central Florida)

Yuan Shi. Aug. 2010 - Dec 2015 (USC Provost Fellowship, Research Assistant)

Franziska Meier. Jan. 2012 - June 2015 (Research Assistant, co-advising with Prof. Stefan K. Schaal)

Kuan Liu. Aug. 2012 - Dec 2015 (Research Assistant)

Hang Ma. Aug. 2014 - June 2015 (USC Viterbi Fellowship, Research Assistant)

Alana Shine. Aug. 2014 - June 2015 (Research Assistant, co-advised with Profs. Shanghua Teng, David Kempe)

Wenzhe Li. Aug. 2014 - June 2015 (Research Assistant, co-advised with Prof. Yan Liu)

James Lu. Oct. 2012 - June 2013 (USC Viterbi School Undergraduate Student, class 2016)

Zi Wang. July 2013 - Aug 2013 (Exchange Undergraduate Student from Tsinghua U.), now at MIT

Dingchao Lu. Aug. 2011 - Aug. 2013 (Rose Hill and USC Viterbi Fellowships, Research Assistant), now in industry

Tomer Levinboim. Aug. 2010 - Aug. 2013 (USC Annenberg Fellowship, Research Assistant), now a PhD student with Prof. David Chiang

Erica Greene. Dec. 2010 - Dec 2012 (Alfred Mann Innovation in Engineering Doctoral Fellowship, Research Assistant), now at Etsy Inc.

Zhouliang Kang. Aug. 2010 - Dec. 2011 (USC Provost Fellowship, Research Assistant), now a Ph.D student at USC with Prof. Gerard Medioni

Meihong Wang. Aug. 2009 - Dec. 2011 (Research Assistant), now at Facebook.

Scott Alfeld. Aug. 2010 - May. 2011 (Research Assistant), now a Ph.D student at U. of Wisconsin

Sikai Zhu. Aug. 2009 - Jan. 2010 (Research Assistant), now at Facebook

Thanant Jitapunkul. Summer 2009 (MIT/NSF REU student), now a Ph.D student at U. of Michigan

Doctoral Dissertation Committees

Jo-Anne Ting (2008), Gautam Thatte(2010), Emily Mower (2010), Abimanyu Das (2011), Kjong Lerhman (2012), Qiang Song (2013), Dian Gong (2013), Ming Li (2013), Qun Feng Tan (2013), , Angeliki Metallinou (2013), Moo-Ryong Ra (2013), Harsh Vathsangam (2013), Yu Pa (2013), Kartik Audhkhasi (2014), Ryan K. Williams (2014), Andreas Tsiartas (2014)

PhD Qualifying Exam Committees at USC

Jessy Lee (2009), Anon Plangprasopchok (2009), Abhishek Sharma (2009), Reid Swanson (2009), Selina Chu (2009), Jonathan Kelly

(2009), Gautam Thatte (2009), Hoang Le (2009), Emily Mower (2009), Thang Dinh (2010), Kiong Lehmann (2010), Dian Gong (2011), Qiang Song (2011), Lingyan Sheng (2011), Harsh Vathsangam (2011), Angeliki Metallinou (2011), Qun Feng Tan (2011), Li Ming (2012), Kartik Audhkhasi (2012), Yukikazu Hidaka (2012), Ryan K. Williams (2012), Peter Pastor (2013), Mrinal Kalakrishnan (2013), Bin Liu (2013), Lin Yang (2014), Charanraj Thimmisetty (2014)

External Committees

Doctoral Dissertation Committee: Remi Lajugie (advised by Prof. Francis Bach and Dr. Sylvain Arlot), École Normale Supérieure (ENS, Paris, France), 2015

Doctoral Dissertation Committee: Jun Wang (advised by Prof. Alexandros Kalousis), U. of Geneva (Geneva, Switzerland), 2015

Doctoral Dissertation Committee: Jin Joo Lee (advised by Prof. Cynthia Breazeal), MIT, 2015

Doctoral Dissertation Committee: Sung Ju Hwang (advised by Prof. Kristen Grauman), U. of Texas (Austin), 2013

PhD General Exam Committee: Jin Joo Lee (advised by Prof. Cynthia Breazeal), MIT, 2013

Doctoral Dissertation Committee: Chih-Chieh Cheng, U. of California (San Diego), 2011