

# Curriculum Vitae

Kilian Quirin Weinberger, Ph.D. (updated Feb 26, 2017)

Associate Professor (with tenure), Cornell University

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## PROFILE

Associate Professor (with tenure), Department of Computer Science, Cornell University.  
Dual citizen of Germany and the United States of America.

## Education

University of Pennsylvania, Ph.D. (GPA 4.0/4.0) Computer Science, 2002 - 2007  
(Committee: Lawrence Saul, Fernando Pereira, Daniel Lee, Benjamin Taskar)  
University of Pennsylvania, M.Sc. (GPA 4.0/4.0) Computer Science, 2004  
University of Oxford, UK, B.A. (1st Class Honors) Mathematics and Computing, 2002

## EMPLOYMENT HISTORY

2015-present Associate Professor with tenure, Cornell University, NY, USA  
2014-2015 Associate Professor with tenure, Washington University in St. Louis, MO, USA  
2010-2014 Assistant Professor, Washington University in St. Louis, MO, USA  
2007-2009 Research Scientist, YAHOO! Research, Santa Clara, CA, USA  
2006 Research Intern, IBM T.J. Watson Research Institute

## CITATION STATISTICS (All statistics based on scholar.google.com, manually corrected for errors.)

Total citations of all publications: 7660  
Total citations of top-three most cited publications: 3281  
H-Index: 37  
Papers with 10 citations or more: 55  
Papers with 100 citations or more: 15

## PROFESSIONAL ACTIVITIES

### Program co-Chair

International Conference in Machine Learning (ICML) 2016  
Association for the Advancement of Artificial Intelligence (AAAI) 2018

### Associate Editor

Transactions on Pattern Analysis and Machine Intelligence (TPAMI) (2014-present)  
Journal of Artificial Intelligence Research, JAIR (2015-2018)

### Area Chair / Senior Program Committee:

ICML (2010, 2011, 2012, 2013, 2014, 2015), NIPS (2010, 2012, 2014), AAAI (2011, 2012, 2015)

### Editorial Board:

Journal of Machine Learning Research, JMLR (2009, 2010, 2011, 2012, 2013, 2014)  
Journal of Artificial Intelligence Research, JAIR (2013, 2014)

### Publications Chair:

ICML (2011, 2012), NIPS (2011, 2012, 2013, 2014)

### Fundraising Chair:

AISTATS 2015, ICML 2015

### Member of Program Committee:

NIPS, AISTATS, IJCAI, CVPR

### Reviewer:

Science, Machine Learning Journal, JMLR, Neural Computation, IEEE TPAMI, Foundation and Trends in  
Machine Learning, NIPS, ICML, AISTATS

### Workshop co-organizer:

“Resource-Efficient Machine Learning”, ICML 2015, “Workshop on Classification on a Budget”, ICML 2013; “Beyond Mahalanobis: Supervised Large-Scale Learning of Similarity”, NIPS 2011; “Workshop on Novel Applications of Dimensionality Reduction”, NIPS 2006

**FUNDING**

- 2017-2021 **ONR: Convolutional-Features Analysis and Control for Mobile Visual Scene Perception**  
Total \$1,710,383, Ferrari (PI), Weinberger (co-PI)
- 2016-2019 **NSF III: Collaborative Research: Differentially Private Learning: from Theory to Applications**  
Total \$500,000, N. Balcan (PI), Weinberger (co-PI) share: \$250,000
- 2016-2018 **Deep Learning for Brain MRI Scans**  
Total: \$471,000, Bill and Melinda Gates Foundation
- 2015-2018 **NSF III: Small: Collaborative Research: Towards Interpretable Machine Learning.**  
Total: \$500,000, Weinberger (PI) share: \$250,000
- 2014-2015 **NSF EPSCOR, The Missouri Transect: Climate, Plants, and Community, J. Walker PI.**  
Total: \$20,000,000, Weinberger (co-PI) share: \$569,941
- 2014-2017 **NSF BPEC: Collaborative Research: Creating Personalized Learning Pathways by Managing Cognitive Load, C. Kelleher PI.** Total: \$522,712, Weinberger (co-PI) share: \$45,000
- 2014-2019 **NIH/NIGMS: Modeling DNA Methylation's Role in Gene Regulation, J. Edwards PI.**  
Total: \$1,575,000.0. Weinberger (co-PI) share: \$171,130
- 2013 **University Research Strategic Alliance: "Machine Learning of Best Practice Patterns in Pediatric Cardiac Surgery: a proof of concept study".** Dr. Eghtesady and Weinberger co-PIs. Total: \$25,000
- 2012 **Yahoo Faculty Engagement Award, 2012.** Weinberger PI. Total: \$15,000 (Gift)
- 2012-2017 **NSF CAREER 1149882: New directions for metric learning,** Weinberger, PI, NSF. Total: \$437,245
- 2011-2015 **NSF EFRI-M3C 1137211: Development of new algorithmic models and tools to enhance neural adaptation in brain computer interface systems,** Moran, PI; Leuthardt, Weinberger co-PIs, NSF. Total: \$1,992,456.00, Weinberger share \$483,881
- 2010-2013 **NIH Characterization/bioformatics-modeling of nanoparticle: complement interactions.** Hourcad, PI. Total: \$2,012,624, Weinberger (co-PI) share \$315,835
- 07/2010 **Yahoo! Faculty Engagement Award, 2010.** Total: \$10,000 (Gift)

**HONORS AND AWARDS**

- 2016 Daniel M Lazar '29 Excellence in Teaching Award
- 2014 KDD Best Student Paper Runner-Up Award
- 2012 NSF CAREER Award
- 2012 Recipient of Yahoo! Faculty Research and Engagement Award
- 2011 Winner of AAAI Outstanding Senior Program Chair Award
- 2010 Recipient of Yahoo! Faculty Research and Engagement Award
- 2008 Winner of Yahoo! You Rock Employee Award (shared with A. Dasgupta and M. Zinkevich)
- 2006 Winner of UCSD Student Data Mining Competition (Document Classification)
- 2005 Best student paper award - AISTATS
- 2004 Best student paper award - CVPR
- 2004 Best student paper award - ICML
- 2002 Data Connection Prize for best undergraduate research project in comp. science - Oxford University
- 2002 Award for outstanding performance in Final Exams - St. Peter's College, Oxford University
- 2001 1000€ Award for exceptional achievements during internship - SIEMENS
- 2000 Awarded scholar status (excellence in 1st year exams) - St. Peter's College, Oxford University

## REFEREED CONFERENCE PUBLICATIONS AND ASSOCIATED JOURNALS

In computer science, different to most other areas of science, the most prestigious way to publish is in conference proceedings. Just like journals in other areas, these are peer-reviewed and refereed. All of my conference publications are at highly competitive conferences with less than 30% acceptance rate.

Authorship is typically in order of contribution. Students who were at the time under my supervision are highlighted in italics.

83. Jacob Gardner, Chuan Guo, Kilian Weinberger, Roman Garnett, Roger Grosse  
**Discovering and Exploiting Additive Structure for Bayesian Optimization**  
 Artificial Intelligence and Statistics (AISTATS) 2017, in press ...
82. Gao Huang, Yixuan Li, Geoff Pleiss, Zhuang Liu, John E. Hopcroft, Kilian Q. Weinberger  
**Snapshot Ensembles: Train 1, Get M for Free**  
 International Conference on Learning Representations (ICLR), 2017, in press...
81. Gao Huang, Chuan Guo, Matt Kusner, Yu Sun, Fei Sha and Kilian Q. Weinberger.  
**Supervised Word Mover's Distance**  
 Neural Information Processing Systems (NIPS), 2016, Curran Associates, Barcelona, Dec., 2016
80. Gao Huang, Yu Sun, Zhuang Liu, Daniel Sedra, Kilian Q. Weinberger  
**Deep Networks with Stochastic Depth**  
 The 14th European Conference on Computer Vision (ECCV), 2016 – Amsterdam, The Netherlands
79. Matt J. Kusner, Yu Sun, Karthik Sridharan, Kilian Q. Weinberger  
**Inferring the Causal Direction Privately**  
 Artificial Intelligence and Statistics (AISTATS), 2016
78. W. Chen, J. Wilson, S. Tyree, Kilian Q. Weinberger, and Y. Chen,  
**Compressing Convolutional Neural Networks in Frequency Domain.**  
 Proc. ACM SIGKDD Conference on Knowledge Discovery and Data Mining (KDD), 2016.
77. JS Siegel, LE Ramsey, AZ Snyder, NV Metcalf, RV Chacko, Kilian Q. Weinberger, Antonello Baldassarrea, Carl D. Hackerc, Gordon L. Shulmana, and Maurizio Corbetta  
**Disruptions of network connectivity predict impairment in multiple behavioral domains after stroke**  
 Proceedings of the National Academy of Sciences, 201521083, 2016
76. Gustavo Malkomes, *Matt J. Kusner, Wenlin Chen*, Kilian Q. Weinberger, Benjamin Moseley  
**Fast Distributed k-Center Clustering with Outliers on Massive Data**  
 Neural Information Processing Systems (NIPS), 2015
75. *Jacob Gardner*, Gustavo Malkomes, Roman Garnett, Kilian Q. Weinberger, Dennis Barbour, John P. Cunningham  
**Bayesian Active Model Selection with an Application to Automated Audiometry**  
 Neural Information Processing Systems (NIPS), 2015
74. Jacob Gardner, Gustavo Malkomes, Roman Garnett, Kilian Weinberger, Dennis Barbour, John Cunningham  
**Bayesian Active Model Selection with an Application to Automated Audiometry.** Neural Information Processing Systems (NIPS), Montreal, CA, Curran Associates, pages 2386--2394.
73. Gustavo Malkomes, *Matt Kusner, Wenlin Chen*, Kilian Weinberger, Benjamin Moseley. **Fast Distributed k-Center Clustering with Outliers on Massive Data.** Neural Information Processing Systems (NIPS), Montreal, CA, Curran Associates, pages 1063--1071.
72. *Jacob R. Gardner*, Xinyu Song, Kilian Q. Weinberger, Dennis Barbour, John Cunningham, **Psychophysical Detection Testing with Bayesian Active Learning.** Conference on Uncertainty in Artificial Intelligence (UAI), Amsterdam, Netherlands
71. *Matt J. Kusner, Yu Sun, Nicholas I. Kolkin*, Kilian Q. Weinberger, **From Word Embeddings to Document Distances.** International Conference on Machine Learning (ICML), 2015, Lille, France. (in press...)

70. *Matt J. Kusner, Jacob R. Gardner, Roman Garnett, Kilian Q. Weinberger*, **Differentially Private Bayesian Optimization**. International Conference on Machine Learning (**ICML**), 2015, Lille, France. (in press...)
69. *Wenlin Chen, James T. Wilson, Stephen Tyree, Kilian Q. Weinberger, Yixin Chen*, **Compressing Neural Networks with the Hashing Trick**. International Conference on Machine Learning (**ICML**), 2015, Lille, France. (in press...)
68. *Wenlin Chen, Yixin Chen, and Kilian Q. Weinberger*. **Filtered Search for Submodular Maximization with Controllable Approximation Bounds**. Proceedings of the Eighteenth International Conference on Artificial Intelligence and Statistics (**AISTATS**), 2015 (In press ...)
67. *Zheng Chen, Minmin Chen, Kilian Q. Weinberger, Weixiong Zhang*. **Marginalized Denoising for Link Prediction and Multi-label Learning**. Association for the Advancement of Artificial Intelligence (**AAAI**), 2015. (In press...)
66. *Quan Zhou, Wenlin Chen, Shiji Song, Jacob R. Gardner, Kilian Q. Weinberger, Yixin Chen*. **A Reduction of the Elastic Net to Support Vector Machines with an Application to GPU Computing**. Association for the Advancement of Artificial Intelligence (**AAAI**), 2015. (In press...)
65. *Matt Kusner, Stephen Tyree, Kilian Q. Weinberger, Kunal Agrawal*, **Stochastic Neighbor Compression**. International Conference on Machine Learning (**ICML**), Beijing China. *JMLR W&CP* 32 (1) :622-630, 2014.
64. *Jacob Gardner, Matt Kusner, Zhixiang (Eddie) Xu, Kilian Q. Weinberger, John Cunningham*, **Bayesian Optimization with Inequality Constraints**. International Conference on Machine Learning (**ICML**), Beijing China. *JMLR W&CP* 32 (1) :937-945, 2014.
63. *Minmin Chen, Kilian Q. Weinberger, Fei Sha, Yoshua Bengio*, **Marginalized Denoising Auto-encoders for Nonlinear Representations**. International Conference on Machine Learning (**ICML**), Beijing China. *JMLR W&CP* 32 (1) : 1476-1484, 2014.
62. *Matt Kusner, Wenlin Chen, Quan Zhou, Eddie Xu and Kilian Weinberger*, **Feature-Cost Sensitive Learning with Submodular Trees of Classifiers**. Proc. AAAI Conference on Artificial Intelligence (**AAAI-14**), 2014. (in press ...)
61. *Zhixiang (Eddie) Xu, Gao Huang, Kilian Q. Weinberger, Alice Zheng*. Gradient Boosted Feature Selection. To appear in 20th ACM SIGKDD Conf. on Knowledge Discovery and Data Mining (**KDD**), 2014, (in press ...).
60. *W. Chen, Y. Chen, K. Weinberger*, **Fast Flux Discriminant for Large-Scale Sparse Nonlinear Classification**, Proc. ACM SIGKDD Conference (**KDD**), 2014. (in press ...) [**Winner of runner-up best paper award.**]
59. *Gao Huang, Shiji Song, Zhixiang (Eddie) Xu, Kilian Q. Weinberger*, Transductive Minimax Probability Machine, European Conference on Machine Learning (**ECML**) 2014 (In press ...)
58. *Z. Xu, M. J. Kusner, K.Q. Weinberger, Minmin Chen*. **Cost-Sensitive Tree of Classifiers**. Proceedings of 30th International Conference on Machine Learning (**ICML**), Atlanta, GA, Published in Journal of Machine Learning Research (**JMLR**) Proceedings track Vol. 28, pages 133-141, 2013.
57. *M. Chen, Alice Zheng, K.Q. Weinberger*. **Fast Image Tagging**. Proceedings of 30th International Conference on Machine Learning (**ICML**), Atlanta, GA, Published in Journal of Machine Learning Research (**JMLR**) Proceedings track Vol. 28, pages 1274-1282, 2013.
56. *Z. Xu, M. J. Kusner, G. Huang, K.Q. Weinberger*. **Anytime Representation Learning**. Proceedings of 30th International Conference on Machine Learning (**ICML**), Atlanta, GA, Published in Journal of Machine Learning Research (**JMLR**) Proceedings track Vol. 28, pages 1076-1084, 2013.
55. *L. van der Maaten, M. Chen, S. Tyree, and K. Q. Weinberger*. **Learning with Marginalized Corrupted Features**. Proceedings of 30th International Conference on Machine Learning (**ICML**), Atlanta, GA, Published in Journal of Machine Learning Research (**JMLR**) Proceedings track Vol. 28, pages 410-418, 2013.
54. *W. Chen, K.Q. Weinberger, and Y.Chen*. **Maximum Variance Correction**. Proceedings of 30th International Conference on Machine Learning (**ICML**), Atlanta, GA, Published in Journal of Machine Learning Research (**JMLR**) Proceedings track Vol. 28, pages 302-310, 2013.

53. Wenlin Chen, Yixin Chen, K.Q. Weinberger, Qiang Lu, and Xiaoping Chen, [Goal-Oriented Euclidean Heuristics with Manifold Learning](#), Proc. AAAI Conference on Artificial Intelligence (**AAAI**), 2013.
52. Q. Lu, W. Chen, Y. Chen, K.Q. Weinberger, and X. Chen, [Utilizing Landmarks in Euclidean Heuristics for Optimal Planning, Late-Breaking Track](#), Proc. AAAI Conference on Artificial Intelligence (**AAAI**), 2013.
51. D. Kedem, S. Tyree, K.Q. Weinberger, F. Sha, G. Lanckriet. [Nonlinear metric learning](#). In Proceedings of Advances in Neural Information Processing Systems 25 (**NIPS**), pages 2582-2590, 2012.
50. Z. (Eddie) Xu, M. Chen, K.Q. Weinberger, F. Sha. [From sBoW to dCoT: Marginalized Encoders for Text Representation](#). Proceedings of 21st ACM Conference of Information and Knowledge Management (**CIKM**), Hawaii, pages 1879-1884, 2012
49. Minmin Chen, Zhixiang (Eddie) Xu, K. Q. Weinberger, F. Sha. [Marginalized Stacked Denoising Autoencoders for Domain Adaptation](#). Proceedings of 29th International Conference on Machine Learning (**ICML**), Edinburgh Scotland, Omnipress, pages 767-774, 2012.
48. Zhixiang (Eddie) Xu, Kilian Q. Weinberger, Olivier Chapelle. [The Greedy Miser: Learning under Test-time Budgets](#). Proceedings of 29th International Conference on Machine Learning (**ICML**), Edinburgh Scotland, Omnipress, pages 1175--1182, 2012.
47. Minmin Chen, Zhixiang (Eddie) Xu, Kilian Q. Weinberger, Olivier Chapelle, Dor Kedem, [Classifier Cascade: Tradeoff between Accuracy and Feature Evaluation Cost](#), 15th International Conference on Artificial Intelligence and Statistics (**AISTATS**), Published in Journal of Machine Learning Research (**JMLR**) Proceedings track Vol. 5, pages 218-226, MIT Press, 2012.
46. Minmin Chen, Kilian Q. Weinberger, John Blitzer. [Co-Training for Domain Adaptation](#). To appear in Advances in Neural Information Processing Systems 25 (**NIPS**), 2011
45. Minmin Chen, K.Q. Weinberger, Y. Chen. [Automatic Feature Decomposition for Single View Co-training](#). Proceedings of the 28th International Conference on Machine Learning (**ICML**), pages 953--960, ACM, Bellevue, USA, 2011.
44. Anirudh Ramachandran, Anirban Dasgupta, Nick Feamster and Kilian Weinberger. [Spam or Ham? Characterizing and Detecting Fraudulent "Not Spam" Reports in Web Mail Systems](#). Eighth Conference on Email and Anti-Spam (**CEAS**), 2011.
43. Stephen Tyree, Kilian Q. Weinberger, Kunal Agrawal, Jennifer Paykin. [Parallel Boosted Regression Trees for Web Search Ranking](#). Proceedings of the 20th international conference on World Wide Web (**WWW**), pages 387-396, ACM, New York, USA, 2011.
42. S. Parameswaran and K.Q. Weinberger. [Large Margin Multi-Task Metric Learning](#). In J. Lafferty, C. K. I. Williams, J. Shawe-Taylor, R.S. Zemel, and A. Culotta (eds.), Advances in Neural Information Processing Systems 23 (**NIPS**), pages 1867-1875, 2010.
41. O. Chapelle, S. Vadrevu, K. Q. Weinberger, P. Shivaswamy, Y. Zhang, B. Tseng. [Multi-Task Learning for Boosting with Application to Web Search Ranking](#), KDD 2010. Proceedings of the 16th international conference on Knowledge discovery and data mining (**SIGKDD**): 1189-1198 ACM.
40. Yuzong Liu, Mohit Sharma, Charles M. Gaona, Jonathan D. Breshears, Jarod Roland, Zachary V. Freudenburg, Kilian Q. Weinberger, and Eric C. Leuthardt. [Decoding Ipsilateral Finger Movements from ECoG Signals in Humans](#). In J. Lafferty, C. K. I. Williams, J. Shawe-Taylor, R.S. Zemel, and A. Culotta (eds.), Advances in Neural Information Processing Systems 23 (**NIPS**), pages 1468-1476, 2010.
39. B. Bai, J. Weston, D. Grangier, R. Collobert, O. Chapelle, K. Q. Weinberger. [Supervised Semantic Indexing](#). The 18th ACM Conference on Information and Knowledge Management (**CIKM**), pages 187-196, 2009.
38. J. Attenberg, K. Q. Weinberger, A. Smola, A. Dasgupta, M. Zinkevich, [Collaborative Email-Spam Filtering with the Hashing-Trick](#), Sixth Conference on Email and Anti-Spam, (**CEAS**). Mountain View, CA, 2009.

37. K. Q. Weinberger, Anirban Dasgupta, John Langford, Alex Smola, Josh Attenberg. [Feature Hashing for Large Scale Multitask Learning](#). In Proceedings of the Twenty Sixth International Conference on Machine Learning (**ICML**), Canada.
36. K. Q. Weinberger and O. Chapell (2008). [Large Margin Taxonomy Embedding with an Application to Document Categorization](#). To appear in proceedings of the 22nd annual conference on Neural Information Processing Systems (**NIPS**), Vancouver, BC, Canada.
35. K. Q. Weinberger, M. Slaney, R. van Zwol (2008). [Resolving Tag Ambiguity](#). In Proceedings of the Fifteenth ACM International Conference on Multimedia (**ACM Multimedia**), Vancouver, BC, Canada.
34. J. M. Lewis, P. M. Hull, K. Q. Weinberger, and L. K. Saul (2008). [Mapping uncharted waters: exploratory analysis, visualization, and clustering of oceanographic data](#). In Proceedings of the Seventh International Conference on Machine Learning and Applications (**ICMLA**), San Diego, CA.
33. M. Slaney, K. Q. Weinberger, W. White (2008). [Learning a Metric for music similarity](#). In Proceedings of the Ninth International Conference on Music Information Retrieval, (**ISMIR**), Philadelphia, PA.
32. K. Q. Weinberger and L. K. Saul (2008). [Fast Solvers and Efficient Implementations for Distance Metric Learning](#). In Proceedings of the Twenty Fifth International Conference on Machine Learning (**ICML**), Helsinki, Finland.
31. K. Q. Weinberger, G. Tesauro (2007). [Metric Learning for Kernel Regression](#). In Proceedings of the Eleventh International Workshop on Artificial Intelligence and Statistics (**AISTATS**), Puerto Rico, Published in Journal of Machine Learning Research (**JMLR**) Proceedings track Vol. 2, pages 612-619.
30. K. Q. Weinberger, F. Sha, Ken Zhu, and L. K. Saul (2006). [Graph Regularization for Maximum Variance Unfolding, with an Application to Sensor Localization](#). In proceedings of the 20th annual conference on Neural Information Processing Systems (**NIPS**), Vancouver.
29. K. Q. Weinberger and L. K. Saul (2006). [An Introduction to Nonlinear Dimensionality Reduction by Maximum Variance Unfolding](#). In Proceedings of the National Conference on Artificial Intelligence (**AAAI**), Nectar paper, Boston MA.
28. K. Q. Weinberger, J. C. Blitzer and L. K. Saul (2005). [Distance Metric Learning for Large Margin nearest Neighbor Classification](#). In Proceedings of the 19th annual conference on Neural Information Processing Systems (**NIPS**), Vancouver, BC, Canada.
27. K. Q. Weinberger, B. D. Packer and L. K. Saul (2005). [Nonlinear Dimensionality Reduction by Semidefinite Programming and Kernel Matrix Factorization](#). In Proceedings of the Tenth International Workshop on Artificial Intelligence and Statistics (**AISTATS**), Barbados. (\* **outstanding student paper award** \*).
26. J. Blitzer, K. Q. Weinberger, L. K. Saul, F. C. N. Pereira (2004). [Hierarchical Distributed Representations for Statistical Language Modeling](#). In Proceedings of the 18th annual conference on Neural Information Processing Systems (**NIPS**), Vancouver.
25. K. Q. Weinberger and L. K. Saul (2004). [Unsupervised learning of image manifolds by semidefinite programming](#). In Proceedings of the IEEE Conference on Computer Vision and Pattern Recognition (**CVPR**), Washington D.C. (\* **outstanding student paper award** \*).
24. K. Q. Weinberger, F. Sha, and L. K. Saul (2004). [Learning a kernel matrix for nonlinear dimensionality reduction](#). In Proceedings of the Twenty First International Conference on Machine Learning (**ICML**), Banff, Canada. (\* **outstanding student paper award** \*).

## REFEREED JOURNAL PUBLICATIONS

23. Mrinal Pahwa, Matthew Kusner, Carl D. Hacker, David T. Bundy, Kilian Q. Weinberger, Eric C. Leuthardt. **Optimizing the Detection of Wakeful and Sleep-Like States for Future Electrographic Brain Computer Interface Applications**

10.1371/journal.pone.0142947

22. Song XD, Wallace BM, Gardner JR, Ledbetter NM, Weinberger KQ, Barbour DL.

**Fast, Continuous Audiogram Estimation Using Machine Learning.**

Ear and hearing, 2015 Nov-Dec; 36(6):e326-35.

21. Z. Xu, M. Chen, K.Q. Weinberger, F. Sha. Marginalizing Stacked Linear Denoising Autoencoders, Journal of Machine Learning Research (**JMLR**), in press ... , 2015.

20. Dennis G Thomas, Satish Chikkagoudar, Alejandro Heredia-Langner, Mark F Tardiff, Zhixiang Xu, Dennis E Hourcade, Christine T N Pham, Gregory M Lanza, Kilian Q Weinberger and Nathan A Baker

**Physicochemical signatures of nanoparticle-dependent complement activation.**

Computational Science & Discovery 7 (1), 015003, 2014.

19. Z. Xu, M. J. Kusner, K.Q. Weinberger, M. Chen, O. Chapelle, Classifier Cascades and Trees for Minimizing Feature Evaluation Cost. Journal of Machine Learning Research (**JMLR**), 15(Jun):2113–2144, 2014.

18. O. Chapelle, P. Shivaswamy, S. Vadrevu, K. Q. Weinberger, Y. Zhang, B. Tseng. [Boosted multi-task learning](#) Machine Learning Journal (**MLJ**), ISSN 0885-6125, pages 1-25, Springer Verlag, 2011.

17. B. Bai, J. Weston, D. Grangier, R. Collobert, K. Sadamasa, Y. Qi, O. Chapelle, K. Q. Weinberger. [Learning to Rank with \(a Lot of\) Word Features](#). Special Issue on Learning to Rank for Information Retrieval, Journal of Information Retrieval (**JIR**). 13:291-314, Springer Verlag, 2010.

16. K. Q. Weinberger and L. K. Saul (2009). [Distance metric learning for large margin nearest neighbor classification](#). Journal of Machine Learning Research (**JMLR**) 10:207-244.

15. K. Q. Weinberger and L. K. Saul (2006) International Journal of Computer Vision (**IJCV**). [Unsupervised Learning of Image Manifolds by Semidefinite Programming](#). Guest Editor(s): Aaron Bobick, Rama Chellappa, Larry Davis, Pages 77-90, Volume 70, Number 1, Springer Netherlands

#### TECHNICAL REPORTS AND WORKSHOP PUBLICATIONS

14. Z. Xu, K.Q. Weinberger, O. Chapelle, [Distance Metric Learning for Kernel Machines](#), arXiv preprint arXiv:1208.3422

13. M. Chen, K. Q. Weinberger, A. Zheng. [Learning from Incomplete Image Tags](#). NIPS Workshop on Large Scale Visual Recognition and Retrieval, 2012.

12. Z. Xu, K.Q. Weinberger, O. Chapelle. [The Greedy Miser: Learning under Test-time Budgets](#). The Learning Workshop, Cliff Lodge, Snowbird, Utah ( Snowbird ) 2012.

11. L.J.P. van der Maaten and K.Q. Weinberger. [Stochastic Triplet Embedding](#). To appear in Proceedings of the IEEE International Workshop on Machine Learning for Signal Processing,

10. M. Chen, Z. (Eddie) Xu, K. Q. Weinberger, F. Sha. [Marginalized Stacked Denoising Autoencoders](#). The Learning Workshop, Cliff Lodge, Snowbird, Utah ( Snowbird ) 2012.

9. A. Mohan, Z. Chen, K.Q. Weinberger. [Web-Search Ranking with Initialized Gradient Boosted Regression Trees](#). published in Journal of Machine Learning Research (**JMLR**), Proceedings Track Vol. 14, Yahoo! Learning to Rank Challenge, pages 77-89, MIT Press, 2011.

8. D. Kedem, Z. (Eddie) Xu, K. Q. Weinberger. [Gradient Boosting for Large Margin Nearest Neighbors](#). Presented at NIPS 2011 Workshop on Beyond Mahalanobis: Supervised Large-Scale Learning of Similarity, Granada Spain.

7. Z. (Eddie) Xu, K.Q. Weinberger, F. Sha. [Rapid Feature Learning with Stacked Linear Denoisers](#). arXiv:1105.0972, 2011 (Technical report, not peer-reviewed.) Presented at ICML 2011 Workshop on Unsupervised and Transfer Learning.



6. E. Hörster, M. Slaney, M. Ranzato, K. Q. Weinberger (2009). [Unsupervised Image Ranking](#). ACM Workshop on Web-Scale Multimedia Corpus (**WSMC 2009**), Beijing, China, October 2009
5. L. Kennedy, M. Slaney, K. Q. Weinberger (2009). [Reliable Tags Using Image Similarity: Mining Specificity and Expertise from Large-Scale Multimedia Databases](#). ACM Workshop on Web-Scale Multimedia Corpus (**WSMC 2009**), Beijing, China, October 2009
4. K.Q. Weinberger, K. Crammer, and L.K. Saul. Locally Adaptive Large Margin Nearest Neighbor Classification. The Learning Workshop, Cliff Lodge, Snowbird, Utah ( Snowbird ) 2006.

### INVITED PUBLICATIONS

3. K.Q. Weinberger, F. Sha, and L.K. Saul. [Convex optimizations for distance metric learning and pattern classification](#). IEEE Signal Processing Magazine, 2010.
2. J. Attenberg, K. Q. Weinberger, A. Smola, A. Dasgupta, M. Zinkevich [Collaborative Spam Filtering with the Hashing Trick](#), Virus Bulletin (VB) 2009
1. K. Q. Weinberger. Book review of: [Nonlinear Dimensionality Reduction](#). John A. Lee and Michel Verleysen. Journal of the American Statistical Association (JASA), ASA, 2009.

### BOOK CHAPTER

1. L. K. Saul, K. Q. Weinberger, F. Sha, J. H. Ham, and D. D. Lee (2005). [Spectral methods for dimensionality reduction](#), in B. Schölkopf, O Chapelle, and A. Zien (eds.), Semisupervised Learning. MIT Press Cambridge, MA

### INVITED TALKS

- |                |   |
|----------------|---|
| September 2017 | 39th German Conference on Pattern Recognition - Basel, Switzerland, Keynote |
| April 2017     | Google Research, Colloquium   |
| February 2017  | NVIDIA, Colloquium  |
| October 2016   | Toyota Institute of Technology - Chicago, Colloquium                        |
| September 2016 | Northeastern University, Boston, Colloquium                                 |
| April 2016     | Harvard University, Boston, Colloquium                                      |
| March 2016     | Google ML Symposium   |
| December 2015  | NIPS Workshop on Feature and Representation Learning                        |
| June 2015      | BeneLearn, NLD, Keynote   |
| October 2014   | Universität Basel, CH, Colloquium   |
| October 2014   | ETH, CH, AI Seminar   |
| October 2014   | Purdue, AI Seminar  |
| September 2014 | Rutgers, AI Colloquium  |
| September 2014 | Cornell University, Colloquium  |
| June 2014      | Tsinghua University, AI Seminar   |
| May 2014       | Stampede 2014 Conference, Invited talk                                      |
| April 2014     | Boston University, Colloquium   |
| February 2014  | Université Paris-Suddenly, Invited workshop talk                            |
| December 2013  | NIPS Workshop on personalization, Invited talk                              |
| December 2013  | NIPS Workshop on output representation learning, Invited talk               |
| December 2013  | NIPS Workshop on Resource-Efficient Machine Learning, Invited talk          |
| September 2013 | Rice University Colloquium  |
| August 2013    | TU Delft, Netherlands Colloquium, Colloquium, Colloquium                    |
| June 2013      | ICML Workshop on Divergence Learning, Invited talk                          |
| April 2013     | University of Utah, Salt Lake City, USA, Colloquium                         |
| April 2013     | John's Hopkins University, Baltimore, MD, USA, AI Seminar                   |
| April 2013     | University of Maryland, College Park, MD, USA, AI Seminar                   |
| April 2013     | Microsoft Research, NYC, NY, USA, Colloquium                                |
| July 2012      | University of Glasgow (UK), AI Seminar                                      |
| May 2012       | Microsoft Research, Colloquium  |
| April 2012     | University of Illinois Urbana Champaign, IL, AI Seminar                     |
| January 2012   | Midwest Vision Workshop, Invited talk                                       |
| September 2011 | Qualcomm Symposium on Context Aware Mobile Computing, Invited talk          |



August 2011 Dagstuhl Workshop on Learning in the context of very high dimensional data, Invited talk  
 December 2010 NIPS Multiple Kernel Learning Workshop (Whistler, CA), Invited talk  
 July 2010 ICML Learning to Rank Workshop (Haifa Israel), Invited talk  
 October 2009 University of California San Diego, CA, Colloquium  
 April 2009 École Polytechnique Fédérale de Lausanne, Switzerland, Colloquium  
 April 2009 Washington University St. Louis, MO, Colloquium  
 March 2009 Gatsby Unit, University College London (UK), Colloquium  
 March 2009 Computer Science Department, Indiana Univ., IN, Colloquium  
 October 2008 Georgia Institute of Technology, GA, Colloquium  
 October 2008 University of Southern California, CA, AI Seminar  
 October 2008 New York University, NY, AI Seminar  
 October 2008 UC Merced, CA, Colloquium  
 January 2007 Banff workshop on Mathematical Programming in Machine Learning, Banff, Canada

### **PATENTS GRANTED**

Automatic super-resolution transformation for images

KQ Weinberger, MG Slaney

US Patent 8,406,571

Distributed spam filtering utilizing a plurality of global classifiers and a local classifier

KQ Weinberger, J Langford

US Patent 8,108,323

Method and apparatus for improved reward-based learning using nonlinear dimensionality reduction

R Das, GJ Tesauro, KQ Weinberger

US Patent 8,060,454

Method and apparatus for improved reward-based learning using adaptive distance metrics

GJ Tesauro, KQ Weinberger,

US Patent 9,298,172

Context aware image representation

KQ Weinberger, M. Slaney

US Patent 8,433,993

Generating congruous metadata for multimedia

M. Slaney, K. Q. Weinberger

US Patent App. 12/042,306

Image similarity from disparate sources

M. Slaney, K.Q. Weinberger, K. Kurapati, S.J. Sathish, P. Ng

US Patent App. 12/533,475

### **PATENTS PENDING**

Gaussian Process Audiogram

DL Barbour, X Song, NM Ledbetter, J Gardner, Kilian Weinberger

PCT/US2016/018595,

Apparatus and methods for classifying senders of unsolicited bulk emails

A. Dasgupta, K.Q. Weinberger, Y. Koren

US Patent App. 12/686,240

Context Aware Image Representation

K.Q. Weinberger, M. Slaney

US Patent App. 12/491,217

Automatically Ranking Multimedia Objects Identified in Response to Search Queries

E. Hoerster, M.G. Slaney, K.Q. Weinberger

US Patent App. 12/470,437

System and method for improved classification  
M.A. Ranzato, K.Q. Weinberger, E. Hoerster, M. Slaney  
US Patent App. 12/341,587

System and method for disambiguating text labeling content objects  
M. Slaney, K.Q. Weinberger, R. Van Zwol  
US Patent App. 12/164,039

Playful incentive for labeling content  
K.Q. Weinberger, A. Dasgupta, R. Ramakrishnan, D. Reiley, M.A.M. Zinkevich, B. Pang, D. Kifer  
US Patent App. 12/147,342

Hierarchical Recognition Through Semantic Embedding  
O. Chapelle, K.Q. Weinberger  
US Patent App. 12/111,500

### PHD THESIS COMMITTEES (incomplete)

#### Internal PhD committees

**Ikenna C. Odinaka**, Identifying Humans by the Shape of Their Heartbeats and Materials by Their X-ray Scattering Profiles, 2014

**Michael W. Stevens**, On the Analysis of DNA Methylation, 2014

**Ly Phan**, *Shape Correspondence for Biological Applications*, 2013.

**Mohit Sharma**, *Characterization the Electrophysiology associated with ipsilateral arm and finger movements using ECoG in humans*, 2013.

**Jordan Williams**, *ECoG correlates of visuomotor transformation, neural plasticity, and application to a force-based Brain Computer Interface*, 2012.

**Ruoyun Huang**, *Efficient Automated Planning with New Formulations*, 2011.

**Adam Rouse**, *Neural Adaptation and the Effect of Interelectrode Spacing on Epidural Electroconvulsive Stimulation for Brain Computer Interfaces*, 2011.

**Charles Michael Gaona**, *Nonuniform Power Changes and Spatial, Temporal and Spectral Diversity in High Gamma Band (>60 Hz) Signals in Human Electroconvulsive Stimulation*, 2011.

**Tom Erez**, *Optimal Control for Autonomous Motor Behavior*, 2011.

**Lu Liu**, *Multi-Dimensional Medial Geometry: Formulation, Computation, and Applications*, 2011.

#### External PhD committees

**Mrinal Pahwa**, Towards Self-Paced Operation of a Brain Controlled Prosthesis, Washington University in St. Louis, 2017

**Michaël Perrot**, Theory and Algorithms for Learning Metrics with Controlled Behaviour, Université Jean Monnet, Saint-Etienne, France, 2016

**Yuxin Chen**, Near-optimal Adaptive Information Acquisition: Theory and Applications, ETH 2016

**Wenlin Chen**, Learning with Scalability and Compactness, Washington University in St. Louis, 2016

**Pratik Kumar Jawanpuria**, "Learning Kernels for Multiple PredictiveTasks.", IIT Bombay (India), 2014

**Djalel Benbouzid**, Sequential prediction for budgeted learning Applications to trigger design, Université Paris-Sud XI 2014

**Blake Shaw**, *Graph Embedding and Nonlinear Dimensionality Reduction*, 2011, Columbia University.

**Anirudh Ramachandran**, *Mitigating spam using network-level features*, 2011, Georgia Institute of Technology.

### TEACHING

#### Cornell:

Spring 2017	CS4780	Machine Learning	252 undergraduates	112 graduates
Fall 2016	CS6784	Advanced Topics in ML	10 undergraduates	18 graduates
Spring 2016	CS6784	Advanced Topics in ML	8 undergraduates	32 graduates
Fall 2015	CS4780	Machine Learning	220 undergraduates	79 graduates

#### Washington University in St. Louis:

Spring 2015      CSE517A    Machine Learning

Fall 2014	CSE519T	Advanced Machine Learning	7 undergraduates	15 graduates
Spring 2014	CSE517A	Machine Learning	22 undergraduates	44 graduates
Fall 2013	CSE511A	Artificial Intelligence	40 undergraduates	15 graduates
Fall 2012	CSE519T	Advanced Machine Learning,	7 undergraduates	31 graduates
Spring 2012	CSE511A	Artificial Intelligence	32 undergraduates	51 graduates
Fall 2010	CSE511A	Artificial Intelligence	25 undergraduates	33 graduates
Spring 2010	CSE517A	Machine Learning	10 undergraduates	23 graduates

## GRADUATE STUDENT SUPERVISION

### PhD alumni:

Matthew Kusner	defended, August 2016	
	thesis title: "Learning in the Real World: Constraints on Cost, Space, and Privacy"	
Minmin Chen	defended, March 2013	
	thesis title: "Learning with Weak or Partial Supervision"	
Zhixiang Xu	defended, August 2014,	
	thesis title: "Supervised Machine Learning Under Test-Time Resource Constraints: A Trade-off Between Accuracy and Cost"	
Stephen Tyree	defended, December 2014,	co-advised with Dr. Kunal Agrawal (primary)
	"Approximation and Relaxation Approaches for Parallel and Distributed Machine Learning."	

### PhD under supervision:

Geoff Pleiss	estimated completion: 2021
Chuan Guo	estimated completion: 2020
Felix Wu	estimated completion: 2020
Jacob Gardner	estimated completion: 2017
Wenlin Wang	estimated completion: 2018

### MS alumni:

Daniel Sedra	defended Spring 2016
Ananth Mohan	defended in Fall 2011
	thesis title: "Web-search ranking with gradient boosting and random forests"
Yuzong Liu	defended in Fall 2011
	thesis title: "Ipsilateral brain decoding"
Dor Kedem	defended in Fall 2013
	graduated based on course work
Gabriel Hope	defended Fall 2015