Xiaoli Z. Fern
Assistant Professor
School of Electrical Engineering and Computer Science
Oregon State University

Education

2005	Ph.D., Computer Engineering Purdue University
2000	M.S., Computer Engineering Shanghai Jiao Tong University
1997	B.S., Automation Shanghai Jiao Tong University

Professional Experience

Sept. 2005–present	Assistant Professor School of Electrical Engineering and Computer Science Oregon State University
Sept. 2000–Aug. 2005	Research Assistant Machine Learning Lab, Electrical and Computer Engineering Purdue University

Publications

Peer-Reviewed Conference Papers

1. Forrest Briggs, Xiaoli Fern and Raviv Raich, Rank Loss Support Instance Machines for MIML Instance Annotation, To appear in *Proceedings of ACM International Conference on Knowledge Discovery and Data Mining* (KDD) 2012,

2. Javad Azimi, Ali Jalali, and Xiaoli Fern, Hybrid Batch Bayesian Optimization, To appear in *Proceedings of International Conference on Machine Learning (ICML)*, 2012, (27.3% acceptance rate)

3. Javad Azimi, Alan Fern, Xiaoli Fern, Glencora Borradaile, and Brent Heeringa, Batch Active Learning via Coordinated Matching, To appear in *Proceedings of International Conference on Machine Learning (ICML)*, 2012 (27.3% acceptance rate)

4. Li-ping Liu and Xiaoli Z Fern, Constructing Training Set for Outlier Detection, *Proceedings of SIAM International Conference on Data Mining* (SDM), 2012 (27% acceptance rate)

5. Javad Azimi, Ruofei Zhang, Yang Zhou, Vidhya Navalpakkam, Jianchang Mao, Xiaoli Fern: The impact of visual appearance on user response in online display advertising. WWW 2012 (Poster)

6. Shahed Sorower, Thomas Dietterich, Janardhan Rao Doppa, Xiaoli Fern and Prasad Tadepalli, Inverting Grice's Maxims to Learn Rules from Natural Language Extractions, In *Advances in Neural Information Processing Systems*, 2011 (21.8% acceptance rate)

7. Javad Azimi, Alan Fern and Xiaoli Fern, Budgeted Optimization with Concurrent Stochastic-Duration Experiments, In NIPS 2011 (4.7% acceptance rate for spotlight)

8. Janardhan Rao Doppa, Mohammad Sorower,Mohammad NasrEsfahani, Jed Irvine, Thomas G. Dietterich, Xiaoli Fern and Prasad Tadepalli, Learning Rules from Incomplete Examples via Implicit Mention Models In *Proceedings of Asian Conference on Machine Learning (ACML)* 2011 (38% acceptance rate)

9. Lawrence Neal, Forrest Briggs, Raviv Raich and Xiaoli Fern, Time-frequency segmentation of bird song in noisy acoustic environments, to appear in *Proceedings of the 36th International Conference on Acoustics, Speech and Signal Processing (ICASSP) 2011*

10. Javad Azimi, Alan Fern and Xiaoli Fern, Batch Bayesian Optimization via Simulation Matching, in *Advances in Neural Information Processing Systems*, 2010 (24% acceptance rate)

11. Javad Azimi, Xiaoli Fern, Alan Fern, Elizabeth Burrows, Frank Chaplen, Yanzhen Fan, Hong Liu, Jun Jiao, and Rebecca Schaller, Myopic Policies for Budgeted Optimization with Constrained Experiments, in *Proceedings of 24th AAAI Conference on Artificial Intelligence*, 2010 (26.9% Acceptance rate)

12. Forrest Briggs, Raviv Raich and Xiaoli Fern. 2009. Audio Classification of Bird Species: a Statistical Manifold Approach. In *Proceedings of IEEE International Conference on Data Mining 2009*, pp 51-60. (9% acceptance rate for full paper)

13. Balaji Lakshminarayanan, Raviv Raich and Xiaoli Fern. 2009. A syllable-level probabilistic framework for bird species identification. In *Proceedings of IEEE International Conference on Machine Learning Applications.* 2009, pp 53-59. (46% acceptance rate)

14. Javad Azimi and Xiaoli Fern. 2009. Adaptive Cluster Ensemble Selection. In Proceedings of the 21st International Joint Conference on Artifical Intelligence (IJCAI) 2009, pp. 992-997. (25.7% acceptance rate)

15. Wei Zhang, Akshat Surve, Xiaoli Fern and Thomas Dietterich. 2009. Learning non-redundant codebooks for classifying complex objects. In *Proceedings of the 26th International Conference on Machine Learning (ICML) 2009*. pp 1241-1248. (25% acceptance rate)

16. Xiaoli Fern and Wei Lin. 2008. Cluster Ensemble Selection. In *Proceedings of SIAM International Conference on Data Mining (SDM) 2008.* pp 787-797. (14% acceptance rate)

17. Neeraja Subrahmaniyan, Laura Beckwith, Valentina Grigoreanu,Margaret Burnett,Susan Wiedenbeck, Vaishnavi Narayanan, Karin Bucht, Russell Drummond, and Xiaoli Fern. 2008. Testing vs. Code Inspection vs. ... What Else? Male and Female End Users' Debugging Strategies. In *Proceedings of CHI 2008.* pp 617-626. (22% acceptance rate)

18. Xiaoli Fern, Chaitanya Komireddy and Margaret Burnett. 2007. Mining Interpretable Human Strategies: A Case Study. In *Proceedings of IEEE International Conference on Data Mining 2007.* pp 475- 480. (19% acceptance rate for short paper)

19. Ying Cui, Xiaoli Z. Fern and Jennifer Dy. 2007. Non-redundant Multi-view Clustering via Orthogonalization. In *Proceedings of IEEE International Conference on Data Mining (ICDM).* pp 133-142. (7% acceptance rate for full paper)

20. Valentina Grigoreanu, Laura Beckwith, Xiaoli Fern, Sherry Yang, Chaitanya Komireddy, Vaishnav Narayanan, Curtis Cook, Margaret Burnett. 2006. Gender Differences in End-User Debugging, Revisited: What the Miners Found. In *Proceedings of IEEE Symposium on Visual Languages and Human-Centric Computing Languages and Environments (VL/HCC).* pp 19-26. (21% acceptance rate)

21. Xiaoli Z. Fern, Carla E. Brodley and Mark A. Friedl. 2005. Correlation clustering for learning mixture of canonical correlation models. In *Proceedings of SIAM International Conference on Data Mining (SDM) 2005.* pp 439-448. (18% acceptance rate)

22. Xiaoli Z. Fern and Carla Brodley. 2004. Solving cluster ensemble problems by bipartite graph partitioning. In *Proceedings of 21st International Conference on Machine learning (ICML)* 2004. pp 281-288. (32% acceptance rate)

23. Xiaoli Z. Fern and Carla Brodley. 2003. Random Projection for High Dimensional Data Clustering: A Cluster Ensemble Approach. In *Proceedings of 20th International Conference on Machine learning (ICML)* 2003. pp 186-193. (32% acceptance rate)

24. Xiaoli Z. Fern and Carla Brodley. 2003. Boosting Lazy Decision Trees. In *Proceedings of 20th International Conference on Machine learning (ICML)* 2003. pp 178-185. (32% acceptance rate)

Peer-Reviewed Workshop Publications

1. Behrouz Behmardi, Forrest Briggs, Xiaoli Z. Fern, and Raviv Raich, Regularized Joint Density Estimation for Multi-Instance Learning, *Proceedings of the IEEE Statistical Signal Processing Workshop* 2012
2. Javad Azimi, Alan Fern and Xiaoli Fern. Active Function Optimization with Multiple Stochastic-Duration Experiments. Appeared in ICML Workshop on Combining Learning Strategies to Reduce Label Cost, 2011

3. Javad Azimi, Ali Jalali, and Xiaoli Fern, Dynamic Batch Bayesian Optimization, Appeared in NIPS Workshop on Bayesian Optimization, 2011
4. Janardhan Rao Doppa, Mohammad NasrEsfahani, Mohammad Sorower, Thomas G. Dietterich, Xiaoli Fern and Prasad Tadepalli, Towards learning rules from natural texts, In *Proceedings of the 1st International Workshop on Formalisms and Methodology for Learning by Reading*, FAM-LR 2010
5. Janardhan Rao Doppa, Mohammad Nasresfahani, Mohammad S. Sorower, Jed Irvine, Thomas G. Dietterich, Xiaoli Fern and Prasad Tadepalli, Learning Rules from Incomplete Examples via Observation Models, *Proceedings of Joint Workshop on Learning by Reading and its Applications in Intelligent Question-Answering* FAM-LbR/KRAQ'11.
6. Mohammad Sorower, Thomas Dietterich, Janardhan Doppa, Prasad Tadepalli and Xiaoli Fern, Mention Model for Learning Rules from Incomplete Examples, *Proceedings of Joint Workshop on Learning by Reading and its Applications in Intelligent Question-Answering* FAM-LbR/KRAQ'11.

Journal Publications

1. Forrest Briggs, Balaji Lakshminarayanan, Lawrence Neal, Xiaoli Z. Fern, Raviv Raich, Sarah Frey, Adam Hadley, and Mattew G. Betts, Acoustic classification of multiple simultaneous bird species: A multi-instance multi-label approach, To appear in Journal of Acoustics Society of America, 2012
2. Xiaoli Z. Fern, Ian Davidson, Jennifer G. Dy, MultiClust 2010: discovering, summarizing and using multiple clusterings. SIGKDD Explorations, 12(2): 47-49 (2010)
3. Xiaoli Fern, Chaitanya Komireddy, Valentina Grigoreanu and Margaret Burnett. Mining Problem Solving Strategies from HCI Data, In ACM Transaction on Computer-Human Interaction (TOCHI), 17(1), 2010
4. Ying Cui, Xiaoli Fern and Jennifer Dy, Learning Multiple Non-redundant Clusterings. ACM Transactions on Knowledge Discovery from Data, 4(3), 2010
5. Elizabeth H. Burrows, Weng-Keen Wong, Xiaoli Fern, Frank W. R. Chaplen and Roger L. Ely. (2009). Optimization of pH and nitrogen for enhanced hydrogen production by Synechocystis sp. PCC 6803 via statistical and machine learning methods, In Biotechnology Progress, 25(4), pp. 1009-1017
6. Xiaoli Fern and Wei Lin. (2008). Cluster Ensemble Selection. In Statistical Analysis and Data Mining, Special Issue on the Best of SDM, 1(3), pp. 128-141
7. Jie Yang, Chenzhou Ye and Xiaoli Zhang (Fern). (2001). An Expert System Shell for Fault Diagnosis. In Robotica, 19(6), pp. 669-674

Papers Currently under Review

1. Javad Azimi, Bruce Zhang, Yang Zhou, Vidhya Navalpakkam, Jianchang Mao, Xiaoli Z. Fern, Visual Appearance of Display Ads and Its Effect on Click Through Rate, Submitted.

2. Sicheng Xiong, Javad Azimi and Xiaoli Fern. Active learning of constraints for semi-supervised clustering. Submitted to IEEE Transaction on Knowledge and Data Engineering
3. Javad Azimi, Xiaoli Fern and Alan Fern. Constrained Bayesian Optimization, Submitted to Journal of Machine Learning Research

Research Grants

External Funding

- NSF Career REU supplement 3/29/12 – 12/31/12, $15,000
- DARPA: "Machine Reading" Co-PI with T. Dietterich (PI), P. Tadepalli, July 2009- Sept 2012, $ 1,208,179
- NSF CAREER: "Active learning for exploratory clustering". 1/1/11-12/31/16, $637,522

Internal Funding

- OSU College of Engineering Seeding Collaborative Research: "Computational Methods for Landscape Bio-Acoustics" $20,000. PI, with Raviv Raich and Matthew Betts.
- REU grant through the H.J. Andrew LTER $8,000

Invited Talks

- Non-redundant Clustering and Code-book Learning, University of Washington, Nov 2009
- New Advances in the World of Clustering, Mentor Graphics, July 2009
- Giving Dilbert a makeover: Broadening participation in computer science through collaborations in ecology and natural resources, Panel presentation, Tapia 2009, Celebration of Diversity in Computing Conference, April 2009
- Ensemble and Multiview clustering, Center for Genome Research and Biocomputing Annual Conference, Oct 2008
- Ensemble and Multiview clustering, Sandia National Lab, April 2008
- High Dimensional Data Clustering and Correlation Analysis, Tufts University, Oct. 2004

Professional Services

Conference and Workshop Organization

- Publicity Chair, International Conference on Machine Learning, 2007
- Co-Chair, SIGKDD 2010 MultiClust: the 1st International Workshop on Discovering, Summarizing and Using Multiple Clusterings, Washington, 2010

Conference Program Committees

- ACM SIGKDD Conference on Knowledge Discovery and Data Mining (KDD), 2006, 2007, 2010, 2011
- Session Chair, SIGKDD, 2007
- International Conference on Machine Learning (ICML), 2007, 2008, 2009, 2012
- European Conference on Machine Learning (ECML) , 2009, 2012
- SIAM International Conference on Data Mining, 2009, 2011
- AAAI Conference on Artificial Intelligence (AAAI), 2007, 2010
- International Joint Conference on Artificial Intelligence (IJCAI) 2011
- Grace Hopper Conference 2010

Editorial Board

- Machine Learning Journal

Reviewing

- NSF Panels - IGERT 2009, CISE 2010
- IEEE Transactions on Pattern Analysis and Machine Intelligence
- IEEE Systems, Man and Cybernetics
- IEEE Transactions on Evolutionary Computation
- IEEE Transaction on Signal Processing
- IEEE Transaction on Knowledge and Data Engineering
- Journal of Artificial Intelligence Research
- Journal of Machine Learning Research
- Machine Learning
- Information Fusion
- Ecology (Ecological Society of American Publication)
- The International Journal on Very Large Data Bases (VLDB)
- Data Mining and Knowledge Discovery

Other services

- Faculty mentor for Oregon State University Ecosystem Informatics Summer Institute (EISI) 2012
- Executive Committee for Ecosystem Informatics (an NSF IGERT Program) 2007-2011
- Scientific Advisory Board Member of the Center for Genome Research and Bio-computing at Oregon State University 2009- present
- Faculty mentor for CRAW DREU program 2009, 2010

Awards

National and International Awards

- NSF Faculty Early Career Development Award (CAREER)

University or Community Awards

- OSU EECS Faculty of the Year 2006