Curriculum Vitæ

Jiayu Zhou

Department of Computer Science and Engineering
Michigan State University

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Education

Ph.D. in Computer Science   2014
Arizona State University, Tempe, Arizona, USA
Dissertation Title: "Multi-Task Learning and Its Applications to Biomedical Informatics"
Advisor: Dr. Jieping Ye

B.Eng. in Computer Science and Technology   2008
Beijing Jiaotong University, Beijing, China

Research Interests

Machine Learning, Data Mining, Biomedical Informatics, Big Data

Experiences

Aug 2015 -	Assistant Professor, Computer Science and Eng., Michigan State University, MI
Nov 2015 -	Adjunct Professor, Media and Information, Michigan State University, MI
Feb 2015 - Aug 2015	Staff Research Scientist, Samsung Research America, CA
Jan 2014 - Feb 2015	Senior Research Scientist, Samsung Research America, CA
Jun 2010 - Jan 2014	Graduate Research Associate, Arizona State University, AZ
May 2013 - Aug 2013	Research Intern, IBM T.J. Watson Research Center, NY
May 2012 - Aug 2012	Research Intern, IBM T.J. Watson Research Center, NY
Dec 2007 - Feb 2008	Research Intern, Microsoft Research Asia, Beijing, China

Honors & Awards

2014	ICDM 2014: **Best Student Paper Award**
2014	**Samsung Best Paper Award** finalist, Samsung (92 out of 1100 submissions from Samsung research centers worldwide)

2013	Invention 1st File Patent Award, IBM Research
2012	SIGKDD 2012: **Best Video Award**, The 18th ACM SIGKDD
2012	SDM 2012: **Best Poster Award**,
2011-2013	Conference Travel Award from SIGKDD 2011, SDM 2011, SDM 2012, SDM 2013.
2009	University Graduate Fellowship, Arizona State University
2007	**National Scholarship**, Ministry of Education, P.R.China

Book

1. Jiayu Zhou and Jieping Ye. *Multi-Task Learning: Models, Algorithms and Applications*, New York: Springer. (under contract)

Software

1. Jiayu Zhou, Jianhui Chen and Jieping Ye. MALSAR: *Multi-task learning via structural regularization*, Arizona State University, 2011. Available at `http://www.MALSAR.org`

Refereed Conference Publications

1. Qi Wang, Liang Zhan, Paul M. Thompson, Hiroko H. Dodge, and Jiayu Zhou. Discriminative Fusion of Multiple Brain Networks for Early Mild Cognitive Impairment Detection. *Proceedings of the IEEE International Symposium on Biomedical Imaging* (**ISBI 2016**).

2. Jianpeng Xu, Kaixiang Lin, Pang-Ning Tan, and Jiayu Zhou. Synergies that Matter: Efficient Interaction Selection via Sparse Factorization Machine. *Proceedings of the 16th SIAM International Conference on Data Mining* (**SDM 2016**). (25.9 % acceptance rate)

3. Jianpeng Xu, Lifeng Luo, Pang-Ning Tan, and Jiayu Zhou. GSpartan: a Geospatio-Temporal Multi-task Learning Framework for Multi-location. *Proceedings of the 16th SIAM International Conference on Data Mining* (**SDM 2016**). (25.9 % acceptance rate)

4. Zhangyang Wang, Shiyu Chang, Jiayu Zhou, Meng Wang, and Thomas Huang. Learning A Task-Specific Deep Architecture for Clustering. *Proceedings of the 16th SIAM International Conference on Data Mining* (**SDM 2016**). (25.9 % acceptance rate)

5. Shiyu Chang, Jiayu Zhou, Pirooz Chubak, and Junling Hu. A Space Alignment Method for Cold-Start TV Show Recommendations. *Proceedings of the 24th International Joint Conference on Artificial Intelligence* (**IJCAI 2015**). (28.8 % acceptance rate)

6. Liang Zhan, Yashu Liu, Jiayu Zhou, Jieping Ye, and Paul Thompson. Boosting Classification Accuracy Of Diffusion MRI Derived Brain Networks For The Subtypes of Mild Cognitive Impairment Using Higher Order Singular Value Decomposition. *Proceedings of the International Symposium on Biomedical Imaging* (**ISBI 2015**).

7. Preeti Bhargava, Thomas Phan, Jiayu Zhou, and Juhan Lee. Who, What, When, and Where: Multi-Dimensional Collaborative Recommendations using Tensor Factorization on Sparse User-Generated Data. *Proceedings of the 24th international World Wide Web conference* (**WWW 2015**). (14.1% acceptance rate)

8. Mohit Sharma, Jiayu Zhou, George Karypis, and Junling Hu. Factorized Bilinear Similarity for Cold-Start Item Recommendations. *Proceedings of the 15th SIAM International Conference on Data Mining* (**SDM 2015**).

9. Jianpeng Xu, Jiayu Zhou, and Pang-Ning Tan. FORMULA: FactORized MUlti-task LeArning for Task Discovery in Personalized Medical Models. *Proceedings of the 15th SIAM International Conference on Data Mining* (**SDM 2015**).

10. Shiyu Chang, Guo-Jun Qi, Charu Aggarwal, Jiayu Zhou, Meng Wang, and Thomas Huang. Supervised Similarity Learning on Networks. *Proceedings of the IEEE 14th International Conference on Data Mining* (**ICDM 2014**). Best Student Paper Award

11. Jie Wang, Jiayu Zhou, Jun Liu, Peter Wonka, and Jieping Ye. A Safe Screening Rule for Sparse Logistic Regression. *Proceedings of the 28th Annual Conference on Neural Information Processing Systems* (**NIPS 2014**). (24.7% acceptance rate)

12. Jiayu Zhou, Fei Wang, Jianying Hu, and Jieping Ye. From Micro to Macro: Data Driven Phenotyping by Densification of Longitudinal Electronic Medical Records. *Proceedings of the 20th ACM SIGKDD International Conference on Knowledge Discovery and Data Mining* (**SIGKDD 2014**). (14.6% acceptance rate)

13. Pinghua Gong, Jiayu Zhou, and Jieping Ye. Efficient Multi-Task Feature Learning with Calibration. *Proceedings of the 20th ACM SIGKDD International Conference on Knowledge Discovery and Data Mining* (**SIGKDD 2014**). (14.6% acceptance rate)

14. Qiang Zhang, Jiayu Zhou, Yilin Wang, Jieping Ye, and Baoxin Li. Image Cosegmentation via Multi-task Learning. *Proceedings of the 25th British Machine Vision Conference* (**BMVC 2014**).

15. Fei Wang, Jiayu Zhou, and Jianying Hu. Density Transfer: A Data Driven Approach for Imputing Electronic Health Records. *Proceedings of the 22nd International Conference on Pattern Recognition* (**ICPR 2014**).

16. Sinchai Tsao, Jiayu Zhou, Jie Shi, Jieping Ye, Yalin Wang, and Natasha Lepore. Evaluating the predictive power of multivariate tensor-based morphometry in Alzheimer's disease progression via convex fused sparse group Lasso. *SPIE Medical Imaging 2014*.

17. Yashu Liu, Zhi Nie, Jiayu Zhou, and Jieping Ye. Sparse Generalized Functional Model for Predicting Remission Status of Depression Patients. *Proceedings of the Pacific Symposium on Biocomputing* (**PSB 2013**).

18. Jie Wang, Jiayu Zhou, Peter Wonka, and Jieping Ye. Lasso Screening Rules via Dual Polytope Projection. *Proceedings of the 27th Annual Conference on Neural Information Processing Systems* (**NIPS 2013**). (Spotlight, 3.5% acceptance rate).

19. Shayok Chakraborty, Jiayu Zhou, Vineeth Balasubramanian, Sethuraman Panchanathan, Ian Davidson, and Jieping Ye. Active Matrix Completion. *Proceedings of the IEEE 13th International Conference on Data Mining* (**ICDM 2013**). (11.6% acceptance rate)

20. Jiayu Zhou, Zhaosong Lu, Jimeng Sun, Lei Yuan, Fei Wang, and Jieping Ye. FEAFINER: Biomarker Identification from Medical Data through Feature Generalization and Selection. *Proceedings of the 19th ACM SIGKDD International Conference on Knowledge Discovery and Data Mining* (**SIGKDD 2013**). (17.4% acceptance rate)

21. Jiayu Zhou, Jimeng Sun, Yashu Liu, Jianying Hu, and Jieping Ye. Patient Risk Prediction Model via Top-k Stability Selection. *Proceedings of the 13th SIAM International Conference on Data Mining* (**SDM 2013**).

22. Jiayu Zhou, Jun Liu, Vaibhav A. Narayan, and Jieping Ye. Modeling Disease Progression via Fused Sparse Group Lasso. *Proceedings of the 18th ACM SIGKDD International Conference on Knowledge Discovery and Data Mining* (**SIGKDD 2012**). (17.6% acceptance rate) Best Video Award.

23. Jiayu Zhou, Jianhui Chen, and Jieping Ye. Clustered Multi-Task Learning via Alternating Structure Optimization. *Proceedings of the 25th Annual Conference on Neural Information Processing Systems* (**NIPS 2011**). (21.7% acceptance rate)

24. Jianhui Chen, Jiayu Zhou, and Jieping Ye. Integrating Low-Rank and Group-Sparse Structures for Robust Multi-Task Learning. *Proceedings of the 17th ACM SIGKDD International Conference on Knowledge Discovery and Data Mining* (**SIGKDD 2011**). (17.5% acceptance rate)

25. Jiayu Zhou, Lei Yuan, Jun Liu, and Jieping Ye. A Multi-Task Learning Formulation for Predicting Disease Progression. *Proceedings of the 17th ACM SIGKDD International Conference on Knowledge Discovery and Data Mining* (**SIGKDD 2011**). (17.5% acceptance rate)

26. Chitta Baral, Juraj Dzifcak, Marcos Alvarez Gonzalez, and Jiayu Zhou. Using Inverse Lambda and Generalization to Translate English to Formal Language. *Proceedings of the 9th International Conference on Computational Semantics* (**IWCS 2011**).

27. Jiayu Zhou, Youfang Lin, and Xi Wang. Visualization of Large-Scale Weighted Clustered Graph: An Evolutionary Approach. *Proceedings of the 23rd National Conference on Artificial Intelligence* (**AAAI 2008**).

28. Jiayu Zhou, Youfang Lin, Shi Wang, and Cungen Cao. Discover Hierarchical Lexical Hyponymy Relation from Large-Scale Concept Set. *Proceedings of the 7th IEEE International Conference on Cognitive Informatics* (**ICCI 2008**).

29. Jiayu Zhou, Shi Wang, and Cungen Cao. A Statistical Acquisition Model of Chinese Lexical Concept based on Google. *The 2nd International Conference on Knowledge Engineering and Management* (**KSEM 2007**).

Journal Publications and Book Chapters

1. Shiyu Chang, Guo-Jun Qi, Yingzhen Yang, Charu Aggarwal, Jiayu Zhou, Meng Wang and Thomas Huang. Large-scale Supervised Similarity Learning in Networks. *Knowledge and Information Systems*, 2015.

2. Liang Zhan, Yashu Liu, Yalin Wang, Jiayu Zhou, Neda Jahanshad, Jieping Ye and Paul Thompson. Boosting Brain Connectome Classification Accuracy in Alzheimers disease using Higher-Order Singular Value Decomposition. *Brain Imaging Methods*, 9:257, 2015.

3. Liang Zhan, Jiayu Zhou, Paul Thompson, and Jieping Ye. Comparison of 9 Tractography Algorithms for Detecting Abnormal Structural Brain Networks in Alzheimer's Disease. *Frontiers in Aging Neuroscience*, 7:48, 2015. Co-First Author.

4. Jianhui Chen, Jiayu Zhou, and Jieping Ye. Low Rank and Sparse Multi-Task Learning. *Low-Rank and Sparse Modeling for Visual Analysis.* Springer, 2014. ISBN 978-3-319-12000-3.

5. Rashmi Dubey, Jiayu Zhou, Yalin Wang, Paul M. Thompson, and Jieping Ye. Analysis of Sampling Techniques for Imbalanced Data: An N=648 ADNI Study. *NeuroImage*, 87:220-241, 2014. (5-Year Impact Factor: 7.063)

6. Jiayu Zhou, Jun Liu, Vaibhav A. Narayan, and Jieping Ye. Modeling Disease Progression via Multi-task Learning. *NeuroImage*, 78:233-248, 2013. (5-Year Impact Factor: 7.063)

7. Jiayu Zhou, Shi Wang, and Cungen Cao. Learning Hierarchical Lexical Hyponymy. *International Journal of Cognitive Informatics and Natural Intelligence (IJCINI)*, 4(1):98-114, 2010.

8. Jiayu Zhou and Shi Wang. Concept Mining and Inner Relationship Discovery from Text. *New Advances in Machine Learning.* InTech, 2010. ISBN 978-953-307-034-6.

Refereed Workshop Papers

1. Zhangyang Wang, Xianming Liu, Shiyu Chang, Jiayu Zhou, Guo-Jun Qi, Thomas S Huang. Decentralized Recommender Systems. *1st International Workshop on Machine Learning Methods for Recommender Systems (MLRec 2015).*

2. Jiayu Zhou, Shiyu Chang, and Junling Hu. Augmented Matrix Factorization with Explicit Labels for Recommender Systems. *1nd Workshop on Recommender Systems for Television and Online Video (RecSysTV 2014).*

3. Thomas Phan, Jiayu Zhou, Shiyu Chang, Junling Hu, and Juhan Lee. Collaborative Recommendation of Photo-Taking Geolocations. *3rd ACM Multimedia Workshop on Geotagging and Its Applications in Multimedia (GeoMM 2014).*

4. Jiayu Zhou, Jimeng Sun, Fei Wang, Jianying Hu, Shahram Ebadollahi, and Jieping Ye. Discover Temporal Dynamics of Biomarkers in Predictive Modeling with Longitudinal Data. *2nd Workshop on Data Mining for Medicine and Healthcare, held in conjunction with the 13th SIAM International Conference on Data Mining (SDM-DMMH).*

Patents

2015	Jiayu Zhou, Yin Zhou, and Jon Currey: "Semantic Embedding Networks", Provisional Application.
2015	Jiayu Zhou, Yin Zhou, and Jon Currey: "Subspace Networks", Provisional Application.
2015	Jiayu Zhou, Yin Zhou, and Jon Currey: "A Method for Multi-Layer Compression for Deep Learning", Provisional Application.
2013	Jiayu Zhou, Fei Wang, and Jianying Hu: "A Method for Densification of Longitudinal EMR for EMR Driven Phenotyping", Patent pending, filed in 2013 (IBM Rate-1).
2013	Jiayu Zhou, Fei Wang, Hanghang Tong, and Yinglong Xia: "System and Method for Patient Disease Status Prediction", Patent pending, filed in 2013.
2012	Jiayu Zhou, Jimeng Sun, Fei Wang, Jianying Hu and Shahram Ebadollahi: "A Method for Biomarker Identification Leveraging Temporal Dynamics", filed in 2012. US20140236544 A1

Teaching & Tutorial Experiences

Fall 2015	Guest Instructor, two lectures on *Multi-Task Learning* to the class "BIOINF585" at University of Michigan
2015	Mining Structured Sparsity Beyond Convexity, Tutorial given at the 2015 International Conference on Data Mining (ICDM)
2012	Multi-Task Learning: Theory, Algorithms, and Applications, Tutorial given at the 2012 SIAM Conference on Data Mining (SDM)
Fall 2012	Guest Instructor, two lectures on *Multi-Task Learning* to the class "Numerical Linear Algebra" at Arizona State University
Spring 2011	Volunteer Speaker, four lectures on *Convex Functions*, Machine Learning Seminar, Arizona State University
Fall 2010	Volunteer Speaker, two lectures on *Predicting Cognitive Scores from MRI*, Machine Learning Seminar, Arizona State University
Fall 2010	Teaching Assistant, "CSE205: Java Programming Language", Arizona State University
Summer 2010	Volunteer Speaker, two lectures on *Posterior Regularization Framework*, Machine Learning Seminar, Arizona State University

Spring 2010	Teaching Assistant, "CSE230: Assembly Language and Computer Architecture", Arizona State University
Spring 2010	Guest Instructor, three lectures on *Log-linear Model and Statistical Machine Translation* to the class "CSE576: Natural Language Processing" at Arizona State University
Fall 2009	Teaching Assistant, "CSE205: Java Programming Language", Arizona State University

Advising Students

- Shiyu Chang, PhD Student, University of Illinois at Urbana-Champaign, Jan 2014 - May 2014, Recommendation algorithms for cold-start items.

- Jianpeng Xu, PhD Student, Michigan State University, May 2014 - Aug 2014, April 2015 - Aug 2015 Personalized models via multi-task learning, Ranking-based recommender systems.

- Mohit Sharma, PhD Student, University of Minnesota, May 2014 - Nov 2014, Factorized bilinear similarity for cold-start item recommendation.

- Preeti Bhargava, PhD Student, University of Maryland College Park, May 2014 - Nov 2014, Tensor-based geo-location recommender system.

Professional Activities

Professional Membership:

- 2005 -, Member, Institute of Electrical and Electronics Engineers (IEEE)

- 2010 -, Member, Society for Industrial and Applied Mathematics (SIAM)

Journal Editorial Board

- 2014 - , Associate Editor, Neurocomputing, Elsevier

Journal Review:

- Journal of Machine Learning Research (JMLR)

- ACM Transactions on Knowledge Discovery from Data (TKDD)

- IEEE Transactions on Knowledge and Data Engineering (TKDE)

- IEEE Transactions on Pattern Recognition and Machine Intelligence (TPAMI)

- IEEE Transactions on Cybernetics

- IEEE/ACM Transactions on Computational Biology and Bioinformatics (TCBBSI)

- Data Mining and Knowledge Discovery (DMKD)

- Pattern Recognition Letters (PRLETTERS)

- Knowledge and Information Systems (KAIS)

- Computational Statistics and Data Analysis (CSDA)

- BMC Bioinformatics

- IBM Journal of Research and Development

- International Journal on Artificial Intelligence Tools (IJAIT)

- The Annals of Applied Statistics (AOAS)

- Statistical Analysis and Data Mining

- Information Fusion

- Knowledge-Based Systems

- Neural Computing and Applications (NCAA)

Organizing Committee:

- The 1st Workshop on Machine Learning Methods for Recommender Systems (MLRec 2015)

Senior Technical Committee Member:

- Industry and Government Co-Chair, IEEE International Conference on Bioinformatics and Biomedicine (**BIBM 2015**)

- Senior PC Member, the 24th International Joint Conference on Artificial Intelligence (**IJCAI 2015**)

- Program Vice Chair, the 3rd ASE International Conference on Big Data Science and Computing (BigDataScience) (**BigDataScience 2014**)

Technical Program Committee Member (or Equivalent) for Conferences:

- The 33rd International Conference on Machine Learning (**ICML 2016**)

- The 22nd ACM SIGKDD Conference on Knowledge Discovery and Data Mining (**KDD 2016**)

- The 16th SIAM International Conference on Data Mining (**SDM 2016**)

- The 25th International Joint Conference on Artificial Intelligence (**IJCAI 2016**)

- National Conference on Artificial Intelligence (**AAAI 2016**)

- The 10th IEEE International Conference on Semantic Computing (ICSC 2016)

- IEEE International Conference on Healthcare Informatics (ICHI 2015)

- The 7th Asian Conference on Machine Learning (ACML 2015)

- 2015 International Conference on Data Science and Advanced Analytics (DSAA 2015)

- The 21st ACM SIGKDD Conference on Knowledge Discovery and Data Mining (**KDD 2015**)

- The 9th IEEE International Conference on Semantic Computing (ICSC 2015)

- The 15th SIAM International Conference on Data Mining (**SDM 2015**)

- The 8th ACM International Conference on WebSearch and Data Mining (**WSDM**)

- The 28th Annual Conference on Neural Information Processing Systems (**NIPS 2014**)

- The 14th International Conference on Data Mining (**ICDM 2014**)

- 2014 International Conference on Data Science and Advanced Analytics (DSAA 2014)

- The 6th Asian Conference on Machine Learning (ACML 2014)

- IEEE International Conference on Big Data (**IEEE BigData 2014**)

- The 18th Pacific-Asia Conference on Knowledge Discovery and Data Mining (**PAKDD 2014**)

- The 14th SIAM International Conference on Data Mining (**SDM 2014**)

- The 5th Asian Conference on Machine Learning (ACML 2013)

Technical Program Committee Member for Workshops:

- 2015 ICDM Workshop DAta mining meets Visual Analytics at Big Data Era (ICDM-DAVA 2015)

- The 1st International Workshop on Event Analytics using Social Media Data (ICDM-EASM 2015)

- 2015 International Workshop on Data Mining for Brain Science (KDD-BrainKDD 2015)

- 2015 KDD Workshop on Connected Health at Big Data Era (KDD-BigCHat 2015)

- The 2nd Workshop on Recommender Systems for Television and Online Video (RecSys-RecSysTV 2015)

- 2015 SDM Workshop on Data Mining for Medicine and Healthcare (SDM-DMMH 2015)

- International Symposium on Foundations and Applications of Big Data Analytics (FAB 2015)

- 2015 1st International Workshop on Scalable Data Analytics: Theory & Applications (WSDM-SDATA 2015)

- The 1st Workshop on Recommender Systems for Television and Online Video (RecSys-RecSysTV 2014)

- 3rd ACM Multimedia Workshop on Geotagging and Its Applications in Multimedia (SIGMM-GeoMM 2014)

- 2014 ICDM Workshop on Scalable Data Analytics: Theory and Applications (SDA-ICDM 2014)

- 2014 International Workshop on Data Mining for Brain Science (KDD-BrainKDD 2014)

- 2014 KDD Workshop on Connected Health at Big Data Era (KDD-BigCHat 2014)

- The 2nd Workshop on Scalable Machine Learning: Theory and Applications (BigData-SML 2014)

- 2014 IEEE/CIC ICCC Symposium on Social Networks and Big Data (ICCC-SNBD 2014)

- 2014 WSDM Workshop on Diffusion Networks and Cascade Analytics (WSDM-DNCA 2014)

- 2014 PAKDD Workshop on Scalable Data Analytics (PAKDD-SDA 2014)

- 2014 SDM Workshop on Data Mining for Medicine and Healthcare (SDM-DMMH 2014)

- 2014 SDM Workshop on Heterogeneous Learning (SDM-HL 2014)

- 2013 ICDM Workshop Mining and Understanding from Big Data (ICDM-BigMUD 2013)

  Track Chair

- The 15th SIAM International Conference on Data Mining (**SDM 2015**)

- The 24th International Joint Conference on Artificial Intelligence (**IJCAI 2015**)

Other Service:

- 2011 - 2012, Grant Reviewer, GPSA, Arizona State University

References

Available upon request.