

Chuan Shi

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Research Interests

Data mining and machine learning

- Social network analysis, including community detection and heterogeneous information network analysis.
- Social media analysis, including Weibo analysis, POI recommendation.
- Multi-objective machine learning, including clustering and multi-label learning.
- Information visualization.

Evolutionary computation and multi-objective optimization

- Theory and applications of evolutionary computation.
- Multi-objective evolutionary algorithms and their applications.

Education

Oct. 2010 – Oct. 2011	Department of Computer Sciences, University of Illinois at Chicago Post-doctor in Data Mining Advisor: Prof. Philip S. Yu	Chicago, USA
Sep. 2004 – Jun.2007	Institute of Computing Technology, Chinese Academy of Sciences Ph.D in Computer Software and Theory Advisor: Prof. Zhongzhi Shi Dissertation: Research on Self-optimization Problem in Autonomic Computing	Beijing, China
Sep. 2001 - Jun. 2004	School of Computer Science, Wuhan University M.Sc in Computer Software and Theory Advisor: Prof. Lishan Kang	Wuhan, China
Sep. 1997 - Jun. 2001	School of Computer Science, Jilin University B.S in Computer Science and Technology	Changchun, China

Academic Experience

Nov. 2014 –Present	Professor School of Computer Science, Beijing University of Posts and Telecommunications, Beijing, China
Nov. 2009 –Nov. 201	Associate Professor School of Computer Science, Beijing University of Posts and Telecommunications, Beijing, China
Jun.2007 –Nov. 2009	Lecturer (Assistant Professor) School of Computer Science, Beijing University of Posts and Telecommunications, Beijing, China

Major Grants

Jan. 2018 – Dec. 2021	National Science Foundation of China: “Research on Key Techniques of Heterogeneous Information Network Analysis based on Social Media Big Data” PI
Jan. 2014 – Dec. 2017	National Science Foundation of China: “Research on Clustering Analysis of Heterogeneous Information Network” PI
Sep. 2014 – Sep. 2016	CCF-Tencent: “Research on social recommendation based on heterogeneous networks” PI
Jan. 2015 – Dec. 2017	National High Technology Research and Development Program (“863”Program) of China: “Key techniques of big data applications on intelligent power’s distribution and usage” Co PI, leader of subject 1

Nov. 2012– Dec. 2014	Ministry of Education –China Mobile Joint Research Plan: “Research and Development on Data Analysis and Cloud Computing Platform based on Enterprise Informatization” Co PI, Leading researcher and developer
Jan. 2010 – Dec. 2012	National Science Foundation of China: “Research on Unsupervised Machine Learning based on Evolutionary Multi-objective Optimization (EMO)” PI
Nov. 2009 – Dec. 2010	BUPT-NOKIA Joint Research Laboratory: “Social Network Analysis and Visualization from Multiple Data Sources” PI
Mar. 2007-June. 2010	Ministry project: “Visualization and mining system based on social network (I-III)” Co PI, Leading researcher and developer

Selected Publications

Books:

1. Chuan Shi, Philip S. Yu. Heterogeneous Information Network Analysis and Applications. Springer. ISBN 978-3-319-56211-7. 2017.
2. 杨娟, 石川, 王柏. 形式语言与自动机(第二版). 北京邮电大学出版社. ISBN 978-7-5635-4997-9. 2017.
3. 牛温佳, 刘吉强, 石川. 用户网络行为画像. 中国工信出版集团 & 电子工业出版社. ISBN 978-7-121-28070-2. 2016.

Book Chapters:

1. Chuan Shi. Chapter 24: Evolutionary Multi-Objective Optimization for Supervised Learning. In: Ying Tan. Swarm Intelligence - From Concepts to Applications. IET. ISBN 978-1-78561-313-5. 2017.

Papers:

1. Yang Xiao, Ding Xiao, Binbin Hu, Chuan Shi. ANE: Network Embedding via Adversarial Autoencoders. BigComp 2018.
2. Chuan Shi, Yizhou Sun. Research development of representation learning for heterogeneous network. Communications of CCF. 2017.12.
3. Chuan Shi, Yizhou Sun, Philip S. Yu. Current development and Future work of heterogeneous information network. Communications of CCF. 2017.11.
4. Fuzhen Zhuang, Zhiqiang Zhang, Mingda Qian, Chuan Shi, Xing Xie, Qing He. Representation learning via Dual-Autoencoder for recommendation. Neural Networks, 90, 83-89, 2017.
5. Zheng, Jing and Zhuang, Fuzhen and Shi, Chuan. Local Ensemble across Multiple Sources for Collaborative Filtering. CIKM2017.
6. Xiaohuan Cao, Yuyan Zheng, Chuan Shi, Jingzhi Li, Bin Wu. Meta-path-based link prediction in schema-rich heterogeneous information network. International Journal of Data Science and Analytics. 2017
7. Jing Zheng, Jian Liu, Chuan Shi, Fuzhen Zhuang, Jingzhi Li, Bin Wu. Recommendation in heterogeneous information network via dual similarity regularization. International Journal of Data Science and Analytics. 2017
8. Chuan Shi, Yitong Li, Jiawei Zhang, Yizhou Sun, Philip S. Yu. A survey on Heterogeneous Information Network Analysis. IEEE Transactions on Knowledge and Data Engineering, 29(1), 17-37, 2017
9. Jian Liu, Chuan Shi, Binbin Hu, Shenghua Liu, Philip S. Yu. Personalized Ranking Recommendation via Integrating Multiple Feedbacks. PAKDD 2017.
10. Yuyan Zheng, Chuan Shi, Xiaohuan Cao, Xiaoli Li, Bin Wu. Entity Set Expansion with Meta Path in Knowledge Graph. PAKDD 2017.
11. Chuan Shi, Yitong Li, Philip S. Yu, Bin Wu. Constrained-Meta-Path based Ranking in Heterogeneous Information Network. Knowledge and Information System, 49(2), 719-747, 2016.
12. Chuan Shi, Jian Liu, Fuzheng Zhuang, Philip S. Yu, Bin Wu. Integrating Heterogeneous Information via Flexible Regularization Framework for Recommendation. Knowledge and Information System, 2016.
13. Chuan Shi, Bowei He, Menghao Zhang, Fuzhen Zhuang, Philip S. Yu, Naiwang Guo. Expenditure Aware Rating Prediction for Recommendation. IEEE BigData 2016.

14. Qiaolian Liu, Jianfei Zhao, Naiwang Guo, Ding Xiao, and Chuan Shi. High-Dimensional Data Visualization Based on User Knowledge. DMBD 2016.
15. Yitong Li, Chuan Shi, Huidong Zhao, Fuzhen Zhuang, and Bin Wu. Aspect Mining with Rating Bias. ECML2016.
16. Jiawei Hu, Zhiqiang Zhang, Jian Liu, Chuan Shi et al. RecExp: A semantic recommender system with explanation based on heterogeneous information network. RecSys 2016.
17. Xiaohuan Cao, Yuyan Zheng, Chuan Shi, Bin Wu. Link Prediction in Schema-Rich Heterogeneous Information Network. PAKDD2016.
18. Jing Zheng, Jian Liu, Chuan Shi, Fuzheng Zhuang, Bin Wu. Dual Similarity Regularization for Recommendation. PAKDD2016.
19. Xiao Ding, Li Yi-Tong, Shi Chuan. Autonomic discovery of subgoals in hierarchical reinforcement learning. Journal of China Universities of Posts and Telecommunications, 21(5): 94–104, 2015.
20. Chuan Shi, Zhiqiang Zhang, Ping Luo, Philip S. Yu, Yading Yue, Bin Wu. Semantic Path based Personalized Recommendation on Weighted Heterogeneous Information Networks. CIKM2015: 453-462.
21. Bowei He, Zhiqiang Zhang, Jian Liu, Fuzhen Zhuang, Chuan Shi. Repeat Buyers Prediction after Sales Promotion for Tmall Platform. IJCAI2015 workshop, 1st International Workshop on Social Influence Analysis. Champion in IJCAI2015 Contest.
22. Chuan Shi, Xiangnan Kong, Yue Huang, Philip S. Yu, Bin Wu. HeteSim: A General Framework for Relevance Measure in Heterogeneous Networks. IEEE Transactions on Knowledge and Data Engineering, 26(10): 2479-2492, 2014.
23. Chuan Shi, Xiangnan Kong, Di Fu, Philip S. Yu. Multi-label Classification based on Multi-Objective Optimization. ACM Transaction on Intelligent Systems and Technology, 5(2), 35, 2014.
24. Chuan Shi, Wang Ran, Yitong Li, Philip S. Yu, Bin Wu. Ranking-based Clustering on General Heterogeneous Information Networks by Network Projection. CIKM 2014: 699-708
25. Xiaofeng Meng, Chuan Shi, Yitong Li, Lei Zhang, Bin Wu. Relevance Measure in Large-Scale Heterogeneous Networks. APWeb 2014: 636-643
26. Gang Liu, Chuan Shi, Qing Chen, Bin Wu, and Jiayin Qi. A Two-Phase Model for Retweet Number Prediction. WAIM 2014: 781-792.
27. Yitong Li, Chuan Shi, Philip S. Yu, and Qing Chen. HRank: A Path Based Ranking Method in Heterogeneous Information Network. WAIM 2014: 553–565.
28. Dongyu Wei, Xin Pan, Chuan Shi, and Yueguo Chen. A Novel Index Structure for Multi-key Search. WAIM 2014: 431–434.
29. Chuan Shi, Philip S. Yu, Zhenyu Yan, Yue Huang, Bai Wang. Comparison and Selection of Objective Functions in Multi-Objective Community Detection. Computational Intelligence, 30(3): 562-582, 2014.
30. Chuan Shi, Yanan Cai, Di Fu, Yuxiao Dong, Bin Wu. A Link Clustering based Overlapping Community Detection Algorithm. Data & Knowledge Engineering, 87: 394-404, 2013.
31. Jingfei Du, Jianyang Lai, Chuan Shi. Multi-objective Optimization for Overlapping Community Detection. ADMA 2013: 489-500.
32. Ran Wang, Chuan Shi, Philip S. Yu, Bin Wu. Integrating Clustering and Ranking on Hybrid Heterogeneous Information Network. PAKDD 2013: 583-594.
33. Chuan Shi, Zhenyu Yan, Yanan Cai, Bin Wu. Multi-objective community detection in complex networks. Applied Soft Computing, 12(2), 2012, 850-859.
34. Chuan Shi, Zhenyu Yan, Xin Pan, Yanan Cai, Bin Wu. A Posteriori Approach for Community Detection. Journal of Computer Science and Technology 26(5): 792-805 2011.
35. Chuan Shi, Xiangnan Kong, Philip S. Yu, Bai Wang. Multi-label Ensemble Learning. ECML/PKDD (3) 2011: 223-239.
36. Chuan Shi, Philip S. Yu, Yanan Cai, Zhenyu Yan, and Bin Wu. On Selection of Objective Functions in Multi-Objective Community Detection. CIKM 2011: 2301-2304.
37. Chuan Shi, Zhenyu Yan, Xin Pan, Yanan Cai and Bin Wu. Multi-objective Decisionmaking in the Detection of Comprehensive Community Structures. CEC2011: 1597-1604.
38. Yanan Cai, Chuan Shi, Yuxiao Dong, Qing Ke, and Bin Wu, A Novel Genetic Algorithm for Overlapping Community Detection. ADMA2011: 557-564. Best paper award

39. Chuan Shi, Zhenyu Yan, Zhongzhi Shi, Lei Zhang, A Fast Multi-objective Evolutionary Algorithm based on a Tree Structure, *Applied Soft Computing*, 10(2), 2010, 468-480.
40. Chuan Shi, Zhenyu Yan, Yi Wang, Yanan Cai, Bin Wu, A Genetic Algorithm for Detecting Communities in Large-scale Complex Networks, *Advances in Complex Systems*, 13(1), 2010, 3-17.
41. Chuan Shi, Cha Zhong, Zhenyu Yan, et al., A Multi-Objective Optimization Approach for Community Detection in complex network, CEC2010.
42. Chuan Shi, Yanan Cai, Philip S. Yu, Zhenyu Yan, Bin Wu, A Comparison of Objective Functions in Network Community Detection, ICDM2010 workshop: 1234-1241.
43. Chuan Shi, Jian Zhang, Liangliang Shi, Yanan Cai, Bin Wu, A Novel Algorithm for Hierarchical Community Structure Detection in Complex Networks, ADMA 2010: 557-564.
44. 赵惠东,刘刚,石川,吴斌. 基于转发传播过程的微博转发量预测[J]. 电子学报, 2016, 44(12): 2989-2996.
45. 王锐,吴玲玲,石川,吴斌. 基于社团结构的链接预测和属性推断联合解决方法[J]. 电子学报, 2015, 44(9): 2062-2067.

Before 2010:

46. Chuan Shi, Zhenyu Yan, Zhongzhi Shi, Bai Wang, Dominance Tree and its Application in Evolutionary Multi-objective Optimization, *Information Sciences*, 179, 2009, 3540-3560.
47. Chuan Shi, Dan Zhou, Bin Wu, Jian Liu, VisNetMiner: An Integration Tool for Visualization and Analysis of Networks, AMDA2009: 611-618.
48. Chuan Shi, Yi Wang, Bin Wu, Cha Zhong, A New Genetic Algorithm for Community Detection, *Complex* 09, vol5, no1, 1298-1309.
49. Shi Chuan, Shi ZhongZhi, Wang Maoguang, Online Hierarchical Reinforcement Learning Based on Path Matching. *Journal of Computer Research and Development (Chinese)*, 45(9), 2008, 1470-1477.
50. Lin Fen, Shi Chuan, Luo Jiewen, Shi ZhongZhi, Dual Reinforcement Learning Based on Bias Learning, *Journal of Computer Research and Development (Chinese)*, 45(9), 2008, 1455-1462.
51. Shi Chuan, Li qingyong, Shi zhongzhi, A Quick Multi-objective Evolutionary Algorithm Based on Dominating Tree, *Journal of Software (Chinese)*, 18(3), 2007, 505-516.
52. Chuan Shi, Zhongzhi Shi, Bin Wu, An Efficient Fitness Assignment Based on Dominating Tree, *Workshops on ICDM 2007*: 247-252.
53. Chuan Shi, Rui Huang, Zhongzhi Shi, Automatic Discovery of Subgoals in Reinforcement Learning using Unique-Direction Value, *ICCI2007*: 480-486.
54. Chuan Shi, Qingyong Li, Zhiyong Zhang, Zhongzhi Shi, An Improved Multiobjective Evolutionary Algorithm Based on Dominating Tree, *PRICAI 2006*: 691-700.
55. Chuan Shi, Jiewen Luo, Fen Lin, A Multi-agent Negotiation Model Applied in Multi-objective Optimization, *PRIMA2006*: 305-314.

University Teaching

2007 - Present	Computer Fundamentals and C Programming , Beijing University of Posts and Telecommunications.
2011 - Present	Formal Languages and Automata , Beijing University of Posts and Telecommunications.
2007 – 2008	Discrete Mathematics , Beijing University of Posts and Telecommunications.

Honors and Awards

Sep. 2017	Zhou Jiongpan Excellent Young Teacher Award in BUPT
May. 2017	Excellent Young AE of SCI journal "Frontiers of Computer Science"
Jan. 2017	Highly Cited Research in Data & Knowledge Engineering of ELSEVIER
Oct. 2015	Excellence Award of CCF-Tencent Xi'niu'niao fund
Jul. 2015	The champion in the IJCAI Contest 2015
Jul. 2013	The recipient of the Youth Talent Plan in Beijing.
Dec. 2011	The best paper award in ADMA2011

Personal info

- Date of Birth: 2nd April 1978.
- Marital Status: Married.
- Gender: Male.