

Hang Li

Current Position

Director of Noah's Ark Lab, Huawei Technologies Co. Ltd.
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Homepages

Personal homepage: <http://www.hangli-hl.com/index.html>
Google scholar homepage: <http://scholar.google.com/citations?user=nTI5mSwAAAAJ>
Blog in Chinese: <http://blog.sina.com.cn/u/2060750830>

Education and Work History

2015/1 – present Director of Noah's Ark Lab, Huawei Technologies
2012/9 – 2014/12 Chief Scientist of Noah's Ark Lab, Huawei Technologies
2001/6 – 2012/5 Senior Researcher & Research Manager, Microsoft Research Asia
1990/4 – 2001/5 Researcher, NEC Research Laboratories, Japan
1994/4 – 1998/7 University of Tokyo, Japan, Ph.D in Computer Science, Supervisor: Prof. Jun'ichi Tsujii
1988/4 – 1990/3 Kyoto University, Japan, Master Degree in Electrical and Electronics Engineering, Supervisor: Prof. Makoto Nagao
1984/4 – 1988/3 Kyoto University, Japan, Bachelor in Electrical and Electronics Engineering
1983/4 – 1984/2 Preparatory School for Chinese Students to Japan, Changchun, China
1982/9 – 1983/2 Xi'an Jiaotong University, Xi'an, China
1977/9 – 1982/8 Jianshe High School, Xi'an, China

Professional Duties

- Adjunct professor of Nanjing University (2007-present).
- Adjunct professor of Peking University (2005-present).
- Adjunct professor of Nankai University (2004-2012).
- Adjunct professor of Xi'an Jiaotong University (2002-2012).
- CCF Member (2011-present).
- IEEE Fellow (2017-present), IEEE Senior Member (2009-2016).
- ACM Distinguished Scientist (2015-present), ACM Member (2009-2015).
- ACL Member (1992-present).
- Member of steering committee of ACM conference on Web Search and Data Mining (2014-present).
- Member of ACL SIGDAT organizing committee (2010-present).
- Editorial board member of Computer Speech and Language (2016-present).
- Editorial board member of Computational Linguistics (2014-2016).
- Editorial board member of Information Retrieval (2014-present).
- Associate Editor of ACM Transactions on Intelligent Systems and Technology (2012-present).

- Editorial board member of Journal of the American Society for Information Science and Technology (2010-2016).
- Editorial board member of Journal of Chinese Information Processing (2007-present).
- Associate editor of ACM Transaction on Asian Language Information Processing (2007-2010).
- Editorial board member of Computational Linguistics & Chinese Language Processing (2004-2012).
- Editorial board member of Journal of Computer Science & Technology (2003-present).
- 2018: senior program committee member of WSDM'18; program committee member of WWW'18.
- 2017: program committee co-chair of SIGIR'17; industry track co-chairs of WSDM'17 and IEEE DSAA'17; senior program committee members or area chairs of WSDM'17, KDD'17, NIPS'17; program committee member of WWW'17, ACL'17; co-editor of special issue on selected papers from ACML 2015 in Machine Learning Journal, co-editor of special issue on deep learning in Journal of Computer Science and Technology, co-editor of special issue on search, mining, and their applications on mobile devices in ACM Transactions on Information Systems.
- 2016: senior program committee members or area chairs of WSDM'16, SIGIR'16, KDD'16, ACML'16, ICDM'16; program committee members of WWW'16, NAACL'16, IJCAI'16, ACL'16; sponsorship co-chair of EMNLP'16; co-editor of special issue on selected papers from ACML 2014 in Machine Learning Journal.
- 2015: general co-chairs of WSDM'15 and ACML'15; industry track co-chair of SIGIR'15; workshop co-chair of ACL'15; senior program committee members or area chairs of NIPS'15 and ICDM'15; sponsorship co-chair of EMNLP'15; program committee members of WWW'15 and ACL'15; co-editor of special issue on SIGKDD 2013 in ACM Transactions on Knowledge Discovery from Data.
- 2014: program committee co-chair of ACML'14; co-organizer of MLSS'14 Beijing; co-chair of CIKM'14 industry track; senior program committee members or area chairs of WSDM'14, SIGIR'14, ICDM'14; program committee members of WWW'14, ACL'14, KDD'14, EMNLP'14, NIPS'14; co-organizer of SIGIR'14 workshop on Semantic Matching in Information Retrieval.
- 2013: senior program committee members or area chairs of WSDM'13, IJCAI'13, KDD'13, ACL'13, ACML'13, EMNLP'13; program committee members of WWW'13, AIRS'13, NIPS'13, ICDM'13; demo co-chair of IJCNLP'13.
- 2012: track co-chair of the web search track of WWW'12; senior program committee members or area chairs of WSDM'12, KDD'12, CIKM'12, ACML'12, AIRS'12; co-chair of KDD'12 summer school; program committee members of ACL'12, NAACL'12, SIGIR'12, ICDM'12, NIPS'12.
- 2011: program committee co-chair of WSDM'11; finance chair of SIGIR'11; senior program committee members or area chairs of SIGIR'11, AAAI'11, NIPS'11; program committee members of WWW'11, ACL'11, KDD'11, ICDM'11, EMNLP'11, ACML'11; co-organizer of SIGIR'11 workshop on Query Representation and Understanding.
- 2010: program committee co-chair of EMNLP'10, senior program committee members of WSDM'10, KDD'10, SIGIR'10; area chairs of ACL'10 and ACML'10; program committee

members of WWW'10, ICDM'10, COLING'10; co-organizer of SIGIR'10 workshop on Query Representation and Understanding.

- 2009: publicity chair of KDD'09; area chairs of EMNLP'09 and ACML'09; program committee members of WWW'09, ACL'09, NAACL-HLT'09, SIGIR'09, CIKM'09, ICDM'09; co-organizer of SIGIR'09 workshop on Learning to Rank for Information Retrieval; co-editor of special issue on Learning to Rank for Information Retrieval in Information Retrieval Journal; co-editor of special issue on Machine Learning and Applications in Journal of Computer Science & Technology.
- 2008: program committee co-chair of AIRS'08; poster and demo co-chair of SIGIR'08; senior program committee member of CIKM'08; area chair of EMNLP'08, program committee members of IJCNLP'08, PAKDD'08, WWW'08, ACL'08, KDD'08, COLING'08, ECML/PKDD'08; co-organizer of SIGIR'08 workshop on Learning to Rank for Information Retrieval.
- 2007: program committee co-chair of PAKDD'07; advisory board member of IJCAI'07; program committee members of SDM'07, WWW'07, NAACL-HLT'07, SIGIR'07, EMNLP'07, CIKM'07; co-organizer of SIGIR'07 workshop on Learning to Rank for Information Retrieval.
- 2006: program committee members of ACL'06, PRICAI'06, AIRS'06, ICCPOL'06, CIKM'06, NIPS'06.
- 2005: area chair of ACL'05; program committee members of IJCAI'05, CoNLL'05, AIRS'05.
- 2004: program committee members of ACL'04, COLING'04, IJCNLP'04, EMNLP'04, CoNLL'04.

Awards

- ACL'12 Best Student Paper Award
- AIRS'10 Best Paper Award
- SIGIR'08 Best Student Paper Award
- SIGKDD'08 Best Application Paper Award
- Microsoft Star Award 2007
- Microsoft Star Award 2005
- 1994 IPSJ Yamashita SIG Research Award

Invited Talks and Tutorials

1. Hang Li, Will Question Answering Become Main Theme of IR Research? Keynote Speech at AIRS 2016, Beijing, 2016.
2. Hang Li, Does IR Need Deep Learning? Keynote Speech at SIGIR 2016 Neu-IR Workshop, Pisa, 2016.
3. Hang Li, Zhengdong Lu, Deep Learning for Information Retrieval, SIGIR 2016 Tutorial, Pisa, 2016.
4. Zhengdong Lu, Hang Li, Recent Progress in Deep Learning for NLP, NAACL-HLT 2016 Tutorial, San Diego, 2016.
5. Hang Li, Building a Better Connected World Using Data Mining and Artificial Intelligence Technologies, Invited Talk at the Industry Track of CIKM 2015, Melbourne, 2015.
6. Hang Li, AI Research at Huawei Technologies, Keynote Speech at ECML/PKDD 2015, Porto, 2015.

7. Hang Li, Short Text Conversation - Challenges and Opportunities, Invited Talk at the Industry Track of ICDM 2014, Shenzhen, 2014.
8. Hang Li, Large Scale Machine Learning for Query Document Matching in Web Search, Invited Talk at the Workshop on Algorithms for Massive Modern Data Sets (MMDS 2012), Palo Alto, 2012.
9. Hang Li, Jun Xu, Beyond Bag-of-Words, Machine Learning for Query-Document Matching in Web Search, SIGIR 2012 Tutorial, Portland, 2012.
10. Hang Li, Jun Xu, Enhancing Search Relevance -Machine Learning Techniques for Better Matching of Query and Document, WWW 2012 Tutorial, Lyon, 2012.
11. Hang Li, Jun Xu, Machine Learning for Query-Document Matching in Search, WSDM 2012 Tutorial, Seattle, 2012.
12. Hang Li, Learning to Rank, ICONIP 2011 Tutorial, Shanghai, 2011.
13. Hang Li, Regularized Semantic Indexing, Invited Talk at the Third Pao-Lu Hsu Statistics Conference, Hangzhou, 2011.
14. Hang Li, Learning to Rank, Lecture at Machine Learning Summer School, Singapore, 2011.
15. Daxin Jiang, Jian Pei, Hang Li, Enhancing Web Search by Mining Search and Browse Logs, SIGIR 2011 Tutorial, Beijing, 2010.
16. Daxin Jiang, Jian Pei, Hang Li, Enhancing Web Search by Mining Search and Browse Logs, SIGIR 2010 Tutorial, Geneva, 2010.
17. Daxin Jiang, Jian Pei, Hang Li, Web Search/Browse Log Mining: Challenges, Methods, and Applications, WWW 2010 Tutorial, Raleigh, 2010.
18. Hang Li, Learning to Rank, ACML 2009 Tutorial, Nanjing, 2009.
19. Hang Li, Learning to Rank, ACL 2009 Tutorial, Singapore, 2009.
20. Hang Li, AdaRank, A Boosting Algorithm for Information Retrieval, Invited Talk at the First Pao-Lu Hsu Statistics Conference, Beijing, 2007.
21. Hang Li, Text Information Extraction and Retrieval, ISCSLP 2006 Tutorial, Singapore, 2006.

Books

1. Hang Li, Jun Xu. Semantic Matching in Search. Foundations and Trends in Information Retrieval. Now Publishers, 2014, ISBN 978-1-60198-804-1.
2. Hang Li. Statistical Learning Methods (in Chinese). Tsinghua University Press, 2012, ISBN 978-7-302-27595-4.
3. Hang Li. Learning to Rank for Information Retrieval and Natural Language Processing. Synthesis Lectures on Human Language Technology, Lecture 12, Morgan & Claypool Publishers, 2011.

Conference Papers

1. Lili Mou, Zhengdong Lu, Hang Li, Zhi Jin, Coupling Distributed and Symbolic Execution for Natural Language Queries, Proceedings of the 34th International Conference on Machine Learning (ICML'17), 2518-2526, 2017.
2. Hao Zhou, Zhaopeng Tu, Shujian Huang, Xiaohua Liu, Hang Li and Jiajun Chen, Chunk-Based Bi-Scale Decoder for Neural Machine Translation, Proceedings of the 55th Annual Meeting of Association for Computational Linguistics (ACL'17), (Short Paper), 580-586, 2017.
3. Xing Wang, Zhengdong Lu, Zhaopeng Tu, Hang Li, Deyi Xiong, Min Zhang. Neural Machine

- Translation Advised by Statistical Machine Translation. Proceedings of the 31st AAAI Conference (AAAI'17), 3330-3336, 2017.
4. Zhaopeng Tu, Yang Liu, Lifeng Shang, Xiaohua Liu, Hang Li. Neural Machine Translation with Reconstruction. Proceedings of the 31st AAAI Conference (AAAI'17), 3097-3103, 2017.
 5. Fandong Meng, Zhengdong Lu, Hang Li, Qun Liu. Interactive Attention for Neural Machine Translation. Proceedings of the 26th International Conference on Computational Linguistics (COLING'16), 2174-2185, 2016.
 6. Shuxin Wang, Xin Jiang, Hang Li, Jun Xu, Bin Wang. Incorporating Semantic Knowledge into Latent Matching Model in Search. Proceedings of 12th Asian Information Retrieval Society Conference (AIRS'16), 29-41, 2016.
 7. Mingxuan Wang, Zhengdong Lu, Hang Li, Qun Liu. Memory-enhanced Decoder for Neural Machine Translation. Proceedings of the 2016 Conference on Empirical Methods in Natural Language Processing (EMNLP'16), 278-286, 2016.
 8. Jiatao Gu, Zhengdong Lu, Hang Li, Victor O. K. Li. Incorporating Copying Mechanism in Sequence-to-Sequence Learning, Proceedings of the 54th Annual Meeting of Association for Computational Linguistics (ACL'16), 2016.
 9. Zhaopeng Tu, Zhengdong Lu, Yang Liu, Xiaohua Liu, Hang Li. Modeling Coverage for Neural Machine Translation. Proceedings of the 54th Annual Meeting of Association for Computational Linguistics (ACL'16), 2016.
 10. Hang Li, Zhengdong Lu. Deep Learning for Information Retrieval. Proceedings of the 39th Annual International ACM SIGIR Conference (SIGIR'16), 1203-1206, 2016.
 11. Jun Yin, Xin Jiang, Zhengdong Lu, Lifeng Shang, Hang Li, Xiaoming Li. Neural Generative Question Answering. Proceedings of the 25th International Joint Conference on Artificial Intelligence (IJCAI'16), 2972-2978, 2016.
 12. Pengcheng Yin, Zhengdong Lu, Hang Li, Ben Kao. Neural Enquirer: Learning to Query Tables with Natural Language. Proceedings of the 25th International Joint Conference on Artificial Intelligence (IJCAI'16), 2308-2314, 2016.
 13. Longyue Wang, Zhaopeng Tu, Xiaojun Zhang, Hang Li, Andy Way Qun Liu. A Novel Approach for Dropped Pronoun Translation. Proceedings of the 15th Annual Conference of the North American Chapter of the Association for Computational Linguistics: Human Language Technologies (NAACL-HLT'16) , 983-993, 2016.
 14. Lin Ma, Zhengdong Lu, Hang Li. Learning to Answer Questions From Image Using Convolutional Neural Network. Proceedings of the 30th AAAI Conference (AAAI'16), 3567-3573, 2016.
 15. Lin Ma, Zhengdong Lu, Lifeng Shang, Hang Li. Multimodal Convolutional Neural Networks for Matching Image and Sentence. Proceedings of 2015 IEEE International Conference on Computer Vision (ICCV'15), 2623-2631, 2015.
 16. Baotian Hu, Zhaopeng Tu, Zhengdong Lu, Hang Li, Qingcai Chen. Context-Dependent Translation Selection Using Convolutional Neural Network. Proceedings of the 53th Annual Meeting of Association for Computational Linguistics and the 7th International Joint Conference on Natural Language Processing (ACL-IJCNLP'15), 536-541, 2015.
 17. Lifeng Shang, Zhengdong Lu, Hang Li. Neural Responding Machine for Short Text Conversation. Proceedings of the 53th Annual Meeting of Association for Computational Linguistics and the 7th International Conference on Natural Language Processing (ACL-

- IJCNLP'15), 1577-1586, 2015.
18. Mingxuan Wang, Zhengdong Lu, Hang Li, Wenbin Jiang, Qun Liu, GenCNN: A Convolutional Architecture for Word Sequence Prediction. Proceedings of the 53th Annual Meeting of Association for Computational Linguistics and the 7th International Conference on Natural Language Processing (ACL-IJCNLP'15), 1567-1576, 2015.
 19. Fandong Meng, Zhengdong Lu, Mingxuan Wang, Hang Li, Wenbin Jiang, Qun Liu. Encoding Source Language with Convolutional Neural Network for Machine Translation. Proceedings of the 53th Annual Meeting of Association for Computational Linguistics and the 7th International Conference on Natural Language Processing (ACL-IJCNLP'15), 20-30, 2015.
 20. Mingxuan Wang, Zhengdong Lu, Hang Li, Qun Liu. Syntax-based Deep Matching of Short Texts. Proceedings of the 24th International Joint Conference on Artificial Intelligence (IJCAI'15), 1354-1361, 2015.
 21. Piji Li, Lidong Bing, Wai Lam, Hang Li. Reader-Aware Multi-Document Summarization via Sparse Coding. Proceedings of the 24th International Joint Conference on Artificial Intelligence (IJCAI'15), 1270-1276, 2015.
 22. Guangyu Feng, Kun Xiong, Yang Tang, Anqi Cui, Jing Bai, Hang Li, Qiang Yang, Ming Li. Question Classification by Approximating Semantics. Proceedings of the 24th World Wide Web Conference (WWW'15), Industry Track, 407-417, 2015.
 23. Jingbo Shang, Tianqi Chen, Hang Li, Zhengdong Lu, Yong Yu. A Parallel and Efficient Algorithm for Learning to Match. Proceedings of IEEE International Conference on Data Mining (ICDM'14), 971-976, 2014
 24. Baotian Hu, Zhengdong Lu, Hang Li, Qingcai Chen. Convolutional Neural Network Architectures for Matching Natural Language Sentences. Proceedings of Advances in Neural Information Processing Systems 27 (NIPS'14), 2042-2050, 2014.
 25. Quan Wang, Jun Xu, Hang Li. User Message Model: A New Approach to Scalable User Modeling on Microblog. Proceedings of 10th Asian Information Retrieval Society Conference (AIRS'14), 209-220, 2014.
 26. Fangzhao Wu, Jun Xu, Hang Li, Xin Jiang. Ranking Optimization with Constraints. Proceedings of ACM International Conference on Information and Knowledge Management (CIKM'14), 1049-1058, 2014.
 27. Zhengdong Lu, Hang Li. In Advances in Neural Information Processing Systems (NIPS'13), 1367-1375, 2013.
 28. Hao Wang, Zhengdong Lu, Hang Li, Enhong Chen. A Dataset for Research on Short-Text Conversation. Proceedings of 2013 Conference on Empirical Methods in Natural Language Processing (EMNLP'13), 935-945, 2013.
 29. Fan Bu, Hang Li, Xiaoyan Zhu. An Introduction to String Rewriting Kernel. Proceedings of the 23rd International Joint Conference on Artificial Intelligence (IJCAI'13), 2982-2986, 2013.
 30. Tianqi Chen, Hang Li, Qiang Yang, Yong Yu. General Functional Matrix Factorization Using Gradient Boosting. Proceedings of the 30th International Conference on Machine Learning (ICML'13), 436-444, 2013.
 31. Wei Wu, Hang Li, Jun Xu. Learning Query and Document Similarities from Click-through Bipartite Graph with Metadata. Proceedings of the 6th ACM International Conference on

- Web Search and Data Mining (WSDM 2013), 687-696, 2013.
32. Yunhua Hu, Yanan Qian, Hang Li, Daxin Jiang, Jian Pei, Qinghua Zheng. Mining Query Subtopics from Search Log Data. Proceedings of the 35th Annual International ACM SIGIR Conference (SIGIR'12), 305-314, 2012.
 33. Quan Wang, Zheng Cao, Jun Xu, Hang Li. Group Matrix Factorization for Scalable Topic Modeling. Proceedings of the 35th Annual International ACM SIGIR Conference (SIGIR'12), 375-384, 2012.
 34. Xiaobing Xue, Yu Tao, Daxin Jiang, Hang Li. Automatically Mining Question Reformulation Patterns from Search Log Data. Proceedings of the 50th Annual Meeting of Association for Computational Linguistics (ACL'12), 187-192, 2012.
 35. Fan Bu, Hang Li, Xiaoyan Zhu. String Re-Writing Kernel. Proceedings of the 50th Annual Meeting of Association for Computational Linguistics (ACL'12), 449-458, 2012.
 36. Hang Li, Gu Xu, W. Bruce Croft, Michael Bendersky, Ziqi Wang, Evelyne Viegas. QRU-1: A Public Dataset for Promoting Query Representation and Understanding Research. Proceedings of the Workshop on Web Search Click Data (WSCD'12), 2012.
 37. Chen Wang, Keping Bi, Yunhua Hu, Hang Li, Guihong Cao. Extracting Search-Focused Key N-Grams for Relevance Ranking in Web Search. Proceedings of the 3rd ACM International Conference on Web Search and Data Mining (WSDM'12), 343-352, 2012.
 38. Bin Gao, Tie-Yan Liu, Wei Wei, Taifeng Wang, Hang Li, Semi-Supervised Ranking on Very Large Graph with Rich Metadata. Proceedings of the 17th ACM SIGKDD International Conference on Knowledge Discovery and Data Mining (KDD'11), 96-104, 2011.
 39. Wu Wei, Hang Li, Yunhua Hu, Rong Jin. Multi-task Learning in Square Integrable Space. Proceedings of the 25th Conference on Artificial Intelligence (AAAI'11), 2011.
 40. Quan Wang, Jun Xu, Hang Li, Nick Craswell. Regularized Latent Semantic Indexing. Proceedings of the 34th Annual International ACM SIGIR Conference (SIGIR'11), 685-694, 2011.
 41. Ziqi Wang, Gu Xu, Hang Li, Ming Zhang. A Fast and Accurate Method for Approximate String Search. Proceedings of the 49th Annual Meeting of Association for Computational Linguistics: Human Language Technologies (ACL-HLT'11), 52-61, 2011.
 42. Jun Xu, Wei Wu, Hang Li, Gu Xu. A Kernel Approach to Addressing Term Mismatch. Proceedings of the 20th International World Wide Web Conference (WWW'11), Poster, 153-154, 2011.
 43. Jun Xu, Hang Li, Chaoliang Zhong. Relevance Ranking Using Kernels. Proceedings of the 6th Asian Information Retrieval Societies Symposium (AIRS'10), 1-12, 2010 (AIRS'10 Best Paper Award).
 44. Biao Xiang, Daxin Jiang, Jian Pei, Xiaohui Sun, Enhong Chen, Hang Li. Context-Aware Ranking in Web Search. Proceedings of the 33rd Annual International ACM SIGIR Conference (SIGIR'10), 451-458, 2010.
 45. Jingfang Xu, Chuanliang Chen, Gu Xu, Hang Li, Elbio Abib. Improving Quality of Training Data for Learning to Rank Using Click-Through Data. Proceedings of the 3rd ACM International Conference on Web Search and Data Mining (WSDM'10), 171-180, 2010.
 46. Wei Chen, Tie-Yan Liu, Yanyan Lan, Zhiming Ma, Hang Li. Ranking Measures and Loss Functions in Learning to Rank. In Advances in Neural Information Processing Systems (NIPS'09), 315-323, 2009.

47. Fen Xia, Tie-Yan Liu, Hang Li. Statistical Consistency of Top-k Ranking. In *Advances in Neural Information Processing Systems 22 (NIPS'09)*, 2098-2106, 2009.
48. Bin Gao, Tie-Yan Liu, Zhiming Ma, Taifeng Wang, Hang Li. A General Markov Framework for Page Importance Computation. *Proceedings of the 18th ACM Conference on Information and Knowledge Management (CIKM'09)*, Short Paper, 1835-1838, 2009.
49. Jiafeng Guo, Gu Xu, Xueqi Cheng, Hang Li. Named Entity Recognition in Query. *Proceedings of the 32nd Annual International ACM SIGIR Conference (SIGIR'09)*, 267-274, 2009.
50. Xin Jiang, Yunhua Hu, Hang Li. A Ranking Approach to Keyphrase Extraction, Poster. *Proceedings of the 32nd Annual International ACM SIGIR Conference (SIGIR'09)*, 267-274, 2009.
51. Gu Xu, Shuanghong Yang, Hang Li. Named Entity Mining from Click-Through Log Using Weakly Supervised Latent Dirichlet Allocation. *Proceedings of the 15th ACM SIGKDD International Conference on Knowledge Discovery and Data Mining (KDD'09)*, 1365-1374, 2009.
52. Bin Zhou, Daxin Jiang, Jian Pei, Hang Li. OLAP on Search Logs: An Infrastructure Supporting Data-Driven Applications in Search Engines. *Proceedings of the 15th ACM SIGKDD International Conference on Knowledge Discovery and Data Mining (KDD'09)*, 1395-1404, 2009.
53. Yanyan Lan, Tie-Yan Liu, Zhi-Ming Ma, Hang Li. Generalization Analysis of Listwise Learning to Rank Algorithms. *Proceedings of the 26th International Conference on Machine Learning (ICML'09)*, 577-584, 2009.
54. Huanhuan Cao, Daxin Jiang, Jian Pei, Enhong Chen, Hang Li. Towards Context-aware Search by Learning a Very Large Variable Length Hidden Markov Model from Search Logs. *Proceedings of the 18th World Wide Web Conference (WWW'09)*, 191-200, 2009.
55. Qi He, Daxin Jiang, Zhen Liao, Steven C. H. Hoi, Kuiyu Chang, Ee-Peng Lim, Hang Li. Web Query Recommendation via Sequential Query Prediction. *Proceedings of the 25th International Conference on Data Engineering (ICDE'09)*, pages 1443-1454, 2009.
56. Tao Qin, Tie-Yan Liu, Xu-Dong Zhang, De-Sheng Wang, Hang Li. Global Ranking Using Continuous Conditional Random Fields. In *Advances in Neural Information Processing Systems 21 (NIPS'09)*, 1281-1288, 2009.
57. Yuting Liu, Bin Gao, Tie-Yan Liu, Ying Zhang, Zhiming Ma, Shuyuan He, Hang Li. BrowseRank: Letting Users Vote for Page Importance, *Proceedings of the 31st Annual International ACM SIGIR Conference (SIGIR'08)*, pages 451-458, 2008. (SIGIR'08 Best Student Paper Award)
58. Huanhuan Cao, Daxin Jiang, Jian Pei, Qi He, Zhen Liao, Enhong Chen, Hang Li. Context-Aware Query Suggestion by Mining Click-Through and Session Data. *Proceedings of the 14th ACM SIGKDD International Conference on Knowledge Discovery and Data Mining (KDD'08)*, 875-883, 2008. (SIGKDD'08 Best Application Paper Award)
59. Jun Xu, Tie-Yan Liu, Min Lu, Hang Li, Wei-Ying Ma. Directly Optimizing Evaluation Measures in Learning to Rank. *Proceedings of the 31st Annual International ACM SIGIR Conference (SIGIR'08)*, 107-114, 2008.
60. Xiubo Geng, Tie-Yan Liu, Tao Qin, Andrew Arnold, Hang Li, Heung-Yeung Shum. Query Dependent Ranking with K Nearest Neighbor. *Proceedings of the 31st Annual International ACM SIGIR Conference (SIGIR'08)*, 115-122, 2008.
61. Jiafeng Guo, Gu Xu, Hang Li, Xueqi Cheng. A Unified and Discriminative Model for Query

- Refinement. Proceedings of the 31st Annual International ACM SIGIR Conference (SIGIR'08), 379-386, 2008.
62. Tao Qin, Tie-Yan Liu, Xu-Dong Zhang, De-Sheng Wang, Wen-Ying Xiong, Hang Li. Learning to Rank Relational Objects and Its Application to Web Search. Proceedings of the 17th International World Wide Web Conference (WWW'08), 407-416, 2008.
 63. Rong Jin, Hamed Valizadegan, Hang Li. Ranking Refinement and Its Application to Information Retrieval. Proceedings of the 17th International World Wide Web Conference (WWW'08), 397-406, 2008.
 64. Gu Xu, Hang Li, Wei-Ying Ma. Fora: Leveraging the Power of Internet Communities for Question Answering. Proceedings of the 1st International Workshop on Question Answering on the Web (QAWeb'08), 2008.
 65. Xiaonan Ji, Gu Xu, James Bailey, Hang Li. Mining, Ranking, and Using Acronym Patterns. Proceedings of the 10th Asia Pacific Web Conference (APWeb'08), 371-382, 2008.
 66. Congkai Sun, Bin Gao, Zhenfu Cao, Hang Li. HTM: A Topic Model for Hypertexts. Proceedings of the 2008 conference on Empirical Methods in Natural Language Processing (EMNLP'08), 514-522, 2008.
 67. Fen Xia, Tie-Yan Liu, Jue Wang, Wensheng Zhang, Hang Li. Listwise Approach to Learning to Rank -Theory and Algorithm. Proceedings of the 25th International Conference on Machine Learning (ICML'08), 1192-1199, 2008.
 68. Yanyan Lan, Tie-Yan Liu, Tao Qin, Zhiming Ma, Hang Li. Query Level Stability and Generalization in Learning to Rank. Proceedings of the 25th International Conference on Machine Learning (ICML'08), 512-519, 2008.
 69. Jun Xu, Yunbo Cao, Hang Li, Nick Craswell, Yalou Huang. Searching Documents based on Relevance and Type. Proceedings of the 29th European Conference on Information Retrieval (ECIR'07), 629-636, 2007.
 70. Yu-Ting Liu, Tie-Yan Liu, Tao Qin, Zhi-Ming Ma, Hang Li. Supervised Rank Aggregation. Proceedings of the 16th International World Wide Web Conference (WWW'07), 481-490, 2007.
 71. Zhe Cao, Tao Qin, Tie-Yan Liu, Ming-Feng Tsai, Hang Li. Learning to Rank: From Pairwise Approach to Listwise Approach. Proceedings of the 24th International Conference on Machine Learning (ICML'07), 129-136, 2007.
 72. Tie-Yan Liu, Jun Xu, Tao Qin, Wenying Xiong, Hang Li. LETOR: Benchmark Dataset for Research on Learning to Rank for Information Retrieval. Proceedings of First SIGIR Workshop on Learning to Rank for Information Retrieval, 2007.
 73. Tao Qin, Tie-Yan Liu, Wei Lai, Xu-Dong Zhang, De-Sheng Wang, and Hang Li. Ranking with Multiple Hyperplanes. Proceedings of the 30th Annual International ACM SIGIR Conference (SIGIR'07), 279-286, 2007.
 74. Jun Xu, Hang Li. AdaRank: A Boosting Algorithm for Information Retrieval. Proceedings of the 30th Annual International ACM SIGIR Conference (SIGIR'07), 391-398, 2007.
 75. Xiubo Geng, Tie-Yan Liu, Tao Qin, Hang Li. Feature Selection for Ranking. Proceedings of the 30th Annual International ACM SIGIR Conference (SIGIR'07), 407-414, 2007.
 76. Tie-Yan Liu, Jun Xu, Tao Qin, Wenying Xiong, Hang Li. LETOR: Benchmark Dataset for Research on Learning to Rank for Information Retrieval. Proceedings of SIGIR 2007 Workshop on Learning to Rank for Information Retrieval, 2007.

77. Yunbo Cao, Jun Xu, Tie-Yan Liu, Hang Li, Yalou Huang, Hsiao-Wuen Hon. Adapting Ranking SVM to Document Retrieval. Proceedings of the 29th Annual International ACM SIGIR Conference (SIGIR'06), 186-193, 2006.
78. Min Zhao, Hang Li, Adwait Ratnaparkhi, Hsiao-Wuen Hon, Jue Wang. Adapting Document Ranking to Users Preferences using Click-through Data. Proceedings of Asian Information Retrieval Symposium (AIRS'16), 26-42, 2006.
79. Guoping Hu, Jingjing Liu, Yunbo Cao, Hang Li, Jian-Yun Nie, and Jianfeng Gao. A Supervised Learning Approach to Entity Search. Proceedings of Asian Information Retrieval Symposium (AIRS'06), 54-66, 2006.
80. Jun Xu, Yunbo Cao, Hang Li, Yalou Huang. Cost Sensitive Learning of SVM for Ranking. Proceedings of the 17th European Conference on Machine Learning (ECML'06), 833-840, 2006.
81. Shenghua Bao, Yunbo Cao, Bing Liu, Yong Yu, Hang Li. Mining Latent Associations of Objects Using a Typed Mixture Model - A Case Study on Expert/Expertise Mining. Proceedings of the 2006 IEEE International Conference on Data Mining (ICDM'06), 803-807, 2006.
82. Guoyang Shen, Bin Gao, Tie-Yan Liu, Guang Feng, Shiji Song, Hang Li. Detecting Link Spam using Temporal Information. Proceedings of the 2006 IEEE International Conference on Data Mining (ICDM'2006) , Short Paper, 1049-1053, 2006.
83. Jun Xu, Yunbo Cao, Hang Li, Min Zhao. Ranking Definitions with Supervised Learning Method. Proceedings of the 14th World Wide Web Conference (WWW'05), 811-819, 2005.
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Product Developments

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- Microsoft SharePoint Search 2012 metadata extraction
- Microsoft Bing 2010 data mining
- Microsoft SharePoint Search 2010 metadata extraction and relevance ranking
- Microsoft Bing 2009 data mining and ranking
- Microsoft Live Search 2008 data mining and ranking
- Microsoft SharePoint Server 2007 metadata extraction
- Microsoft SQL Server 2005 text mining
- NEC TopicScope (previously SurveyAnalyzer) 2000

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