

Tie-Yan Liu

PERSONAL INFORMATION

Date of Birth June 28, 1976
Place of Birth Heilongjiang Province, P. R. China
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EDUCATION

07/2003 Ph.D. in Electronic Engineering, Tsinghua University, China
Thesis: Theories and Algorithms for Video Analysis
07/2000 Master in Electronic Engineering, Tsinghua University, China
Thesis: Integration of Video Coding and Retrieval
07/1998 Bachelor in Electronic Engineering, Tsinghua University, China

RESEARCH EXPERIENCE

07/2003 ~ present **Lead Researcher at Microsoft Research Asia**
Research Area: Learning to rank
A related paper won the **Best Student Paper Award** at SIGIR 2008.
03/2002 ~ 08/2002 **Research Assistant at Hong Kong Polytechnic University**
Research Area: Video Shot Boundary Detection
A related paper won the **Most Cited Paper Award** for the Journal of Visual Communication and Image Representation (2004~2006).
11/1999 ~ 05/2000 **Research Assistant at City University of Hong Kong**
Research Area: High-performance Video Coding

SELECTED PROFESSIONAL ACTIVITIES

Guest Editor

Special Issue on Learning to Rank for Information Retrieval, Information Retrieval Journal

Editorial Board Member

Information Retrieval Journal

Program Committee Co-Chair

RIAO 2010 Recherche d'Information Assistée par Ordinateur 2010, Paris, France.

Workshop Co-Chair

IR4IR 2009 SIGIR 2009 workshop on Learning to Rank for Information Retrieval, Boston, USA.

IR4IR 2008 SIGIR 2008 workshop on Learning to Rank for Information Retrieval, Singapore.

IR4IR 2007 SIGIR 2007 workshop on Learning to Rank for Information Retrieval, Amsterdam, Netherlands.

Area Chair

SIGIR 2009 ACM SIGIR Conference on Research and Development in Information Retrieval 2009, Boston, USA.
AIRS 2009 Asian Information Retrieval Symposium 2009, Hokkaido, Japan.
SIGIR 2008 ACM SIGIR Conference on Research and Development in Information Retrieval 2008, Singapore.

Program Committee Member

WWW 2010 The World Wide Web Conference 2010, Raleigh, North Carolina.
ICDM 2009 International Conference on Data Mining 2009, Florida, USA.
CIKM 2009 ACM Conference on Information and Knowledge Management 2009, Hong Kong, China.
ACL 2009 Annual Meeting of the Association for Computational Linguistics 2009, Boulder, USA.
SDM 2009 SIAM International Conference on Data Mining 2009, Nevada, USA.
ECIR 2009 European Conference on Information Retrieval 2009, Toulouse, France.
WWW 2008 The World Wide Web Conference 2008, Beijing, China.
ICML 2008 International Conference on Machine Learning 2008, Helsinki, Finland.
ACL 2008 Annual Meeting of the Association for Computational Linguistics 2008, Columbus, USA.
CIKM 2008 ACM Conference on Information and Knowledge Management 2008, Napa Valley, USA.
SIGIR 2007 ACM SIGIR Conference on Research and Development in Information Retrieval 2007, Amsterdam, Netherlands.
SIGIR 2006 ACM SIGIR Conference on Research and Development in Information Retrieval 2006, Seattle, USA.

Reviewer

NIPS 2009 Annual Conference on Neural Information Processing Systems, 2009, Vancouver, Canada.
Journal of Machine Learning Research.
IEEE Transactions on Pattern Analysis and Machine Intelligence.
Foundations and Trends in Information Retrieval.
ACM Transactions on Information System.
IEEE Transactions on Knowledge and Data Engineering.
IEEE Transactions on Neural Network.
Journal of the American Society for Information Science and Technology.
Journal of Information Processing and Management.

Tutorial Speaker

WWW 2009 The World Wide Web Conference 2009, Madrid, Spain.
WWW 2008 The World Wide Web Conference 2008, Beijing, China.
SIGIR 2008 ACM SIGIR Conference on Research and Development in Information Retrieval 2008, Singapore.
AIRS 2008 Asian Information Retrieval Symposium 2008, Harbin, China.

Invited Speaker

T-FaNT 2008 Tokyo Forum on Advanced NLP and Data Mining, 2008.
PSC 2007 Pao-Lu Hsu Statistics Conference: Machine Learning, 2007.
DCWC 2007 Forum on Digital Content Processing and Web Computing, 2007.
MLA 2006 Workshop on Machine Learning and Its Application, 2006.

Dataset Owner

LETOR

<http://research.microsoft.com/~letor/>, a benchmark dataset for research on learning to rank.

PATENTS

More than 50 filed patents or pending applications

- In learning to rank, search system, link analysis, and distributed learning platform.

AWARDS AND HONORS

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| 2009 | Microsoft Technology Transfer Award |
| 2008 | Best Student Paper Award , SIGIR 2008.
- <i>BrowseRank: Letting Web Users Vote for Page Importance</i> |
| 2006 | Most Cited Paper Award for Journal of Visual Communication and Image Representation
- <i>A New Cut Detection Algorithm with Constant False-Alarm Ratio for Video Segmentation</i> |

SELECTED PUBLICATIONS

- The selected papers have more than **400** citations in total, according to Google Scholar.

Book (Chapters)

1. Tie-Yan Liu. *Learning to Rank for Information Retrieval*, **Springer** (in press).
2. Tie-Yan Liu and Bin Gao. *High-Order Heterogeneous Data Mining*, Book Chapter, **Machine Learning and Its Applications**, 2007.

Journal Papers

3. Tie-Yan Liu. *Learning to Rank for Information Retrieval*, **Foundations and Trends in Information Retrieval**, 2009.
4. Tao Qin, Xu-Dong Zhang, Ming-Feng Tsai, De-Sheng Wang, Tie-Yan Liu, and Hang Li. *Query-level Loss Function for Information Retrieval*. **Information Processing and Management**, 2007.
5. Tao Qin, Xu-Dong Zhang, Tie-Yan Liu, De-Sheng Wang, Hong-Jiang Zhang. *An Active Feedback Framework for Image Retrieval*, **Pattern Recognition Letters**, 2007.
6. Ying Bao, Guang Feng, Tie-Yan Liu, Zhiming Ma and Ying Wang*. *Ranking Websites: A Probabilistic View*, **Internet Mathematics**, 2007.
7. Tao Qin, Tie-Yan Liu, Xu-Dong Zhang, Guang Geng, De-Sheng Wang, and Wei-Ying Ma. *Topic Distillation Via Subsite Retrieval*, **Information Processing and Management**, 2006.
8. Bin Gao, Tie-Yan Liu, Xin Zheng, Qiansheng Cheng, and Wei-Ying Ma. *Hierarchical Taxonomy Preparation for Text Categorization Using Consistent Bipartite Spectral Graph Co-partitioning*, **IEEE Transactions on Knowledge and Data Engineering**, 2005.
9. Tie-Yan Liu, Yiming Yang, Hao Wan, Hua-Jun Zeng, Zheng Chen, and Wei-Ying Ma. *Support Vector Machines Classification with Very Large Scale Taxonomy*, **SIGKDD Explorations**, 2005.
10. Tie-Yan Liu, Kwoktung Lo, Xu-Dong Zhang, and Jian Feng. *A New Cut Detection Algorithm with Constant False-Alarm Ratio for Video Segmentation*, **Journal of Visual Communications and Image Representation**, 2004. **[Most Cited Paper Award, 2004~2006]**

11. Tie-Yan Liu, Xu-Dong Zhang, Jian Feng, and Kwoktung Lo. *Shot Reconstruction Degree: a Novel Criterion for Key Frame Selection*, **Pattern Recognition Letters**, 2004.
12. Tie-Yan Liu, Kwoktung Lo, Xu-Dong Zhang, and Jian Feng. *Frame Interpolation Scheme Using Inertia Motion Prediction*. **Signal Processing: Image Communication**, 2003.
13. Tie-Yan Liu, Kwoktung Lo, Xu-Dong Zhang, and Jian Feng. *Inertia-based Cut Detection and Its Integration with Video Coder*. **IEE Proceedings on Vision, Image and Signal Processing**, 2003.

Conference Papers

14. Yanyan Lan, Tie-Yan Liu, Zhiming Ma, and Hang Li. Generalization Analysis for Listwise Learning to Rank Algorithms, **ICML** 2009.
15. Tao Qin, Tie-Yan Liu, Xu-Dong Zhang, De-Sheng Wang, and Hang Li. *Global Ranking Using Continuous Conditional Random Fields*, **NIPS** 2008.
16. Fen Xia, Tie-Yan Liu, Jue Wang, Wensheng Zhang, and Hang Li. *Listwise Approach to Learning to Rank: Theory and Algorithm*, **ICML** 2008.
17. Yanyan Lan, Tie-Yan Liu, Tao Qin*, Zhiming Ma, and Hang Li. Query-level Stability and Generalization in Learning to Rank, **ICML** 2008.
18. Tao Qin, Tie-Yan Liu, Xu-Dong Zhang, De-Sheng Wang, Wen-Ying Xiong*, and Hang Li. *Learning to Rank Relational Objects and Its Application to Web Search*, **WWW** 2008.
19. Xiubo Geng, Tie-Yan Liu, Tao Qin, Andrew Arnold*, Hang Li, and Heung-Yeung Shum. *Query-dependent Ranking using K-Nearest Neighbor*, **SIGIR** 2008.
20. Yuting Liu, Bin Gao, Tie-Yan Liu, Ying Zhang, Zhiming Ma, Shuyuan He, and Hang Li. *BrowseRank: Letting Web Users Vote for Page Importance*, **SIGIR** 2008. **[Best Student Paper Award]**
21. Jun Xu, Tie-Yan Liu, Min Lu, Hang Li, and Wei-Ying Ma. *Directly Optimizing IR Evaluation Measures in Learning to Rank*, **SIGIR** 2008.
22. Zhe Cao, Tao Qin, Tie-Yan Liu, Ming-Feng Tsai*, and Hang Li. *Learning to Rank: From Pairwise Approach to Listwise Approach*. **ICML** 2007.
23. Yuting Liu, Tie-Yan Liu, Tao Qin, Zhi-Ming Ma, and Hang Li. *Supervised Rank Aggregation*, **WWW** 2007.
24. Xiubo Geng, Tie-Yan Liu, Tao Qin, and Hang Li. *Feature Selection for Ranking*, **SIGIR** 2007.
25. Mingfeng Tsai, Tie-Yan Liu, Tao Qin, Hsin-Hsi Chen, and Wei-Ying Ma. *FRank: A Ranking Method with Fidelity Loss*, **SIGIR** 2007.
26. Tao Qin, Tie-Yan Liu, Wei Lai, Xu-Dong Zhang, De-Sheng Wang, and Hang Li. *Ranking with Multiple Hyperplanes*, **SIGIR** 2007.
27. Tie-Yan Liu, Tao Qin, Jun Xu, and Hang Li. *LETOR: Benchmark dataset for research on learning to rank for information retrieval*, **LR4IR** 2007, in conjunction with **SIGIR** 2007.
28. Guang Feng, Tie-Yan Liu, Ying Wang, Ying Bao, Zhiming Ma, Xu-Dong Zhang, and Wei-Ying Ma. *AggregateRank: Bringing Order to Websites*, **SIGIR** 2006.
29. Yunbo Cao, Jun Xu, Tie-Yan Liu, Hang Li, Yalou Huang, and Hsiao-Wuen Hon. *Adapting Ranking SVM to Document Retrieval*, **SIGIR** 2006.
30. Qiankun Zhao, Chuhong Hoi, Tie-Yan Liu, Sourav S. Bhowmick, Michael R. Lyu, and Wei-Ying Ma. *Time-Dependent Semantic Similarity Measure of Queries Using Historical Click-Through Data*, **WWW** 2006.
31. Qiankun Zhao, Tie-Yan Liu, Sourav S. Bhowmick, and Wei-Ying Ma. *Event Detection from Evolution of Click-through Data*, **KDD** 2006.
32. Tao Qin, Tie-Yan Liu, Xu-Dong Zhang, Zheng Chen, and Wei-Ying Ma. *A Study on Relevance Propagation for Web Search*, **SIGIR** 2005.
33. Bin Gao, Tie-Yan Liu, Xin Zheng, Qian-Sheng Cheng, Wei-Ying Ma. *Consistent Bipartite Graph Co-Partitioning for Star-Structured High-Order Heterogeneous Data Co-Clustering*, **KDD** 2005.
34. Bin Gao, Tie-Yan Liu, Tao Qin, Xin Zheng, Qian-Sheng Cheng, and Wei-Ying Ma. *Web Image Clustering by Consistent Utilization of Visual Features and Surrounding Texts*, **ACM Multimedia** 2005.

REFERENCES

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