Yiqun Liu
Associate Professor & Vice Chair

Department of Computer Science and Technology
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Introduction

Dr. Liu is now working as associate professor at the Department of Computer Science and Technology in Tsinghua University, Beijing, China. His major research interests is in Web Search, Information Retrieval, User Behavior Analysis, and Natural Language Processing. He is also a Principle Investigator (PI) of a joint Center (named NExT) between National University of Singapore and Tsinghua University to develop technologies for live media search.

He serves in the editorial board of the Information Retrieval Journal (Springer) and also as program committee members of a number of important international academic conferences including SIGIR, WWW, ACL and WSDM. He is the coordinator for the NTCIR (NII Testbeds and Community for Information access Research) INTENT and IMine tasks since 2011.

Education

Bachelor of Computer Science & Technology, Tsinghua University, Beijing, China, 2003;

Ph.D. in Computer Science & Technology, Tsinghua University, Beijing, China, 2007

Research Projects

I'm generally interested in the research areas of Web search technology and Web user behavior analysis, and have particular focus on improving search performance with the help of user behavior analysis.

Current commercial search engines face great challenges in the rapid growth of WWW data and user requests. In order to improve their performance, we believe that the behavior information of search users, so called "wisdom of the crowd", can be utilized. With the support of National Natural Science Foundation of China and "Tsinghua—Sohu" Joint Lab on Web Search Technology, tangible progresses were made in this direction.

The aspects of our recent projects cover Web page quality estimation, Web spam page and illegal resource identification, search performance evaluation, on-line advertising performance evaluation, and search engine query recommendation. We have published several high-quality papers in TWEB, JASIST, JIR, IJCAI, SIGIR, WWW, CIKM, WSDM, and some other important journals and conferences. 21 Chinese patents were filed and 11 of them were authorized. Algorithms and systems developed from these projects have been adopted by Sogou.com, one of the most popular search engines in China.

Major Awards

"Qian Weichang" Chinese Information Processing Award: Youth Innovation Prize (2010)

Best paper nomination award / Best poster paper award, Asian Information Retrieval Society conference, AIRS 2013

Representative Publications

Yiqun Liu, Fei Chen, Weize Kong, Huijia Yu, Min Zhang, Shaoping Ma, Liyun Ru. Identifying Web Spam with the Wisdom of the Crowds. ACM Transaction on the Web. Volume 6, Issue 1, March 2012.

Yiqun Liu, Junwei Miao, Min Zhang, Shaoping Ma, Liyun Ru, How do users describe their information need: Query recommendation based on snippet click model, Expert Systems with Applications, Volume 38, Issue 11, July 2011, Pages 13847-13856.

Yiqun Liu, Shaoping Ma, Tao Hong, Zizheng Liu. Fundamentals of Search Engine Technology. Tsinghua University Press, 2010.

Yiqun Liu, Min Zhang, Liyun Ru, and Shaoping Ma, Data Cleansing for Web Information Retrieval using Query Independent Features, Journal of the American Society for Information Science and Technology, vol. 58, no. 12, pp. 1884-1898, 2007.

Xin Li, *Yiqun Liu*, Min Zhang, Shaoping Ma, Fraudulent Support Telephone Number Identification Based on Co-occurrence Information on the Web. AAAI 2014.

Chao Wang, *Yiqun Liu*, Min Zhang, Shaoping Ma, MeihongZheng, Jing Qian, Kuo Zhang. Incorporating Vertical Results into Search Click Models. SIGIR 2013:503-512.

Chao Wei, *Yiqun Liu*, Min Zhang, Shaoping Ma, LiyunRu, Kuo Zhang: Fighting against web spam: a novel propagation method based on click-through data. SIGIR 2012:395-404

Qianli Xing, *Yiqun Liu*, Min Zhang, Shaoping Ma, Jianyun Nie, Kuo Zhang. Incorporating User Preferences into Click Models. The 22nd ACM International Conference on Information and Knowledge Management (CIKM 2013)

Jian Liu, *Yiqun Liu*, Min Zhang, Shaoping Ma, Kuo Zhang. A Study of Long-term Search Engine Users' Behavior. The 22nd ACM International Conference on Information and Knowledge Management (CIKM 2013).

Qianli Xing, *Yiqun Liu*, Min Zhang, Shaoping Ma, and Kuo Zhang. Characterizing Expertise of Search Engine Users. The ninth Asian Information Retrieval Societies Conference (AIRS 2013). ***Best paper nomination award***.

Bo Zhou, *Yiqun Liu*, Min Zhang, Yijiang Jin, Shaoping Ma, Incorporating Web Browsing Information into Anchor Texts for Web Search, Information Retrieval (2010): 1-25, November 28, 2010.

Danqing Xu, *Yiqun Liu*, Min Zhang and Shaoping Ma. Incorporating Revisiting Behaviors into Click Models. Proceedings of the 5th ACM International Conference on Web Search and Data Mining. WSDM 2012 (Seattle, U.S.). pp. 303-312.

Yuchen Tian, *Yiqun Liu*, Danqing Xu, Ting Yao, Min Zhang and Shaoping Ma. Incorporating Seasonal Time Series Analysis with Search Behavior Information in Sales Forecasting. Proceedings of the 21th international Conference on World Wide Web (WWW 2012). Poster.

Danqing Xu, Yiqun Liu, Min Zhang, Liyun Ru, Shaoping Ma. Predicting Epidemic Tendency through Search Behavior Analysis. In Proceedings of the 22nd International Joint Conference on Artificial Intelligence (IJCAI-11) (Barcelona, Spain).

Rongwei Cen, *Yiqun Liu*, Min Zhang, Liyun Ru, Shaoping Ma. 2010. Study language models with specific user goals. In Proceedings of the 19th international Conference on World Wide Web (Raleigh, North Carolina, USA, April 26 - 30, 2010). WWW '10. ACM, New York, NY, 1073-1074.

Weize Kong, *Yiqun Liu*, Shaoping Ma, Liyun Ru. 2010. Detecting epidemic tendency by mining search logs. In Proceedings of the 19th international Conference on World Wide Web (Raleigh, North Carolina, USA, April 26 - 30, 2010). WWW '10. ACM, New York, NY, 1133-1134.

Qianli Xing, *Yiqun Liu*, Rongwei Cen, Min Zhang, Shaoping Ma, Liyun Ru.2010. Are search engine users equally reliable?. In Proceedings of the 19th international Conference on World Wide Web (Raleigh, North Carolina, USA, April 26 - 30, 2010). WWW '10. ACM, New York, NY, 1207-1208.

Yiqun Liu, Yijiang Jin, Min Zhang, Shaoping Ma, Liyun Ru, User Browsing Graph: Structure, Evolution and Application. Late breaking result session in Second ACM International Conference on Web Search and Data Mining (WSDM 2009).

Rongwei Cen, *Yiqun Liu*, Min Zhang, Bo Zhou, Liyun Ru, Shaoping Ma. Exploring Relevance for Clicks. In Proceeding of the 18th ACM Conference on information and Knowledge Management (Hong Kong, China, November 02 - 06, 2009). CIKM '09. ACM, New York, NY, 1847-1850.

Yiqun Liu, Min Zhang, Shaoping Ma, Liyun Ru, User behavior oriented web spam detection, in Proceeding of the 17th International World Wide Web Conference **(WWW'08), 2008, pp. 1039**-1040.

Yiqun Liu, Rongwei Cen, Min Zhang, Shaoping Ma, Liyun Ru. Identifying Web Spam with User Behavior Analysis. The Fourth International Workshop on Adversarial Information Retrieval on the Web. 2008.4.

Yiqun Liu, Yupeng Fu, Min Zhang, Shaoping Ma, Liyun Ru. Automatic Search Engine Performance Evaluation with Click-through Data Analysis. in Proceedings of the 16th international Conference on World Wide Web (Banff, Alberta, Canada, May 08 - 12, 2007). WWW '07. ACM, New York, NY, 1133-1134.

Patents

Yiqun Liu, Min Zhang, Yijiang Jin, Shaoping Ma. An automatic method for search engine performance evaluation. Application No. 200610144289.X, Authorized No. CN100440224C.

Yiqun Liu, Min Zhang, Shaoping Ma. A method for locating news pages on the Web. Application No. 200810117516.9. Authorized No. CN101329687.

Yiqun Liu, Shaoping Ma, Min Zhang, Yijiang Jin, Kuo Zhang, Liyun Ru. A method and corresponding equipments for synonym extraction. Application No. 200910087076.1. Authorized No. CN101576916

Cenrong Wei, *Yiqun Liu*, Min Zhang, Shaoping Ma. A method for search result reranking based on user behavior anlaysis. Application No. 200710099594.6, Authorized No. CN101055587.

Cenrong Wei, *Yiqun Liu*, Min Zhang, Shaoping Ma. An automatic method for locating key resource pages on the Web. Application No. 200710098531.9, Authorized No.CN101105801.

Bo Zhou, *Yiqun Liu*, Min Zhang, Shaoping Ma. A method of query correction for Chinese search engines. Application No. 200810224323.3. Authorized No. CN101369285.

Junwei Miao, *Yiqun Liu*, Min Zhang, Yijiang Jin, Shaoping Ma, Kuo Zhang, Liyun Ru. Method and system for internet context advertising. Application No. 200910088943.3.

Qi Fang, *Yiqun Liu*, Shaoping Ma, Min Zhang, Yijiang Jin, Zijian Tong, Liyun Ru. A method for Web page recommendation based on Web accsess log analysis. Application No. 200910236869.5.

Bo Zhou, *Yiqun Liu*, Min Zhang, Yijiang Jin, Shaoping Ma, Liyun Ru, Lei Yang. Method and system for Web page description based on browsing behavior. Application No. 201010109570.6.

Bo Zhou, *Yiqun Liu*, Min Zhang, Yijiang Jin, Shaoping Ma, Liyun Ru, Lei Yang. Method and system for Web page description based on search engine interaction behavior. Application No. 201010109586.7.

Xinglong Yan, *Yiqun Liu*, Shaoping Ma, Min Zhang, Yijiang Jin, Kuo Zhang, Liyun Ru, Domain specific known item identification based on Web page anchor text. Application No. 201110091312.4

Tong Zhu, *Yiqun Liu*, Shaoping Ma, Min Zhang, Yijiang Jin, Kuo Zhang, Liyun Ru, Method and system for search engine evaluation. Application No. 201110098378.6.