

Liang Wu

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HIGHLIGHTS

I am an expert on ranking, recommendation, and personalization. I am currently working in the core ranking team of Airbnb. During my time in Airbnb, I contributed the most impactful single experiment on boosting the revenue of Airbnb Experiences by 3.9% ([SIGIR 2020 paper](#)). Before Airbnb, I worked on revenue optimization for product search in Etsy, and query suggestion for Bing at Microsoft Research. I have won the third place of KDD Cup 2012 on Predicting CTR of Ads for Tencent.

I am also an active researcher in academia. I publish papers at and serve as a program committee member for major AI conferences such as WSDM, SIGIR, KDD, AAAI. I have filed 6 patents and received 3 patent awards that have been cited by Alibaba, Baidu, Huawei, Microsoft, The Fourth Paradigm, *etc.* My publications on information retrieval and data mining can be found on my [Google Scholar](#) profile with over 700 citations and an h-index of 15. I received my PhD with Dr. Huan Liu, an AAAI, AAAS, IEEE and ACM fellow at ASU.

PROFESSIONAL EXPERIENCE

<i>Machine Learning Data Scientist</i> Airbnb, San Francisco, CA	April 2019 - Present
<i>Intern Data Scientist</i> Airbnb, San Francisco, CA	May 2018 - September 2018
<i>Data Science Intern</i> Etsy, Brooklyn, NY	May 2017 - August 2017
<i>Research Intern</i> NEC Labs, Beijing, China	September 2013 - July 2014
<i>Research Intern</i> Microsoft Research Asia, Beijing, China	August 2012 - May 2013
<i>Research Intern</i> Nokia Research Center, Beijing, China	April 2012 - August 2012

HONORS AND AWARDS

Outstanding PhD Student in Computer Science in 2018, Arizona State University
KDD Cup 2012, 3rd Place on the Leaderboard (3/163), CTR Prediction of Search Sponsored Ads.

ACADEMIC ACTIVITIES

Program Committee Member for Top Data Science/Informational Retrieval Conferences:
SIGIR (2018-2020), KDD (2018-2020), AAAI (2018-2020), WSDM (2019-2020), CIKM (2019-2020), IEEE BigData (2018-2019), PAKDD (2018-2020).

EDUCATION

<i>PhD</i> , Computer Science and Engineering Arizona State University, Tempe, AZ GPA 4.06/4.0	Advisor: Dr. Huan Liu August 2014 - March 2019
<i>MSc</i> , Computer Science University of Chinese Academy of Sciences, Beijing, China	Advisor: Dr. Yuanchun Zhou September 2011 - July 2014
<i>BSc</i> , Computer Science Beijing University of Posts and Telecommunications, Beijing, China	September 2007 - July 2011

TUTORIALS

Liang Wu, Filippo Menczer, and Huan Liu, Mining Misinformation in Social Media: Understanding Its Rampant Spread, Harm, and Intervention. IEEE International Conference on Data Mining (**ICDM 2017**), November 18 - November 21, 2017. New Orleans, LA.

Liang Wu, Fred Morstatter, and Huan Liu, Mining Misinformation in Social Media: Diffusion, Detection and Intervention. (**SBP 2016**), June 28 - July 1, 2016. Washington, D.C.

INTELLECTUAL PROPERTY DISCLOSURES

Liang Wu, and Huan Liu. “Method and Apparatus for detecting fake news in a social media network”, Filed, USA Non-Provisional Application. M18-220P-US1, 2019.

Jundong Li, **Liang Wu**, and Huan Liu. “Exploiting Global and Personalized User Information for Learning in Social Media”, Filed, USA Provisional Application. M18-250P, 2018.

Liang Wu, Xia Hu and Huan Liu. “Systems and Methods for Predicting Social Status of Social Network Users”, Filed, US Provisional Patent, M16-240P, 2016.

Bo Liu, **Liang Wu** and Jianqiang Li. “Multitask Conditional Random Fields for Sequential Prediction.” Filed, China Patent, CN201410056862.6, 2014. (Cited by **Baidu**, **The Fourth Paradigm**, **Tencent**, **Wuxi Little Swan**, *etc.*)

Bo Liu and **Liang Wu**. “Method and System on Semantic-based Code Program Retrieval.” Granted, China Patent, CN104809139A, 2014. (Cited by **Microsoft**, **Alibaba**, *etc.*)

Bo Liu, **Liang Wu**, Weisong Hu and Xiaowei Liu. “Method and System for Multi-task Air Quality Prediction.” Granted, CN201410475151.2, China Patent, 2014.

Bo Liu, **Liang Wu**, Weisong Hu and Xiaowei Liu. “Method and System for Air Quality Index Prediction.” Granted, CN105488316A, China Patent, 2014. (Cited by **Huawei Technologies**, **Test True**, *etc.*)

PUBLICATIONS

Books and Book Chapters

Liang Wu, Xia Hu, and Huan Liu, “Exposing Social Spammers - A Data Mining Perspective”, Cambridge University Press, 2019 (In Preparation).

Liang Wu, and Huan Liu, “Detecting Crowdturfing in Social Media”, Encyclopedia of Social Network Analysis and Mining, Springer, 2017.

Liang Wu, Fred Morstatter, Xia Hu, Huan Liu, “Mining Misinformation in Social Media”, Big Data in Complex and Social Networks, Chapman and Hall/CRC, 2016.

Conference Papers

Liang Wu, Mihajlo Grbovic. “How Airbnb Tells You Will Enjoy Sunset Sailing in Barcelona? Recommendation in a Two-Sided Travel Marketplace”, ACM SIGIR Conference on Research and Development in Information Retrieval (**SIGIR 2020**), July 25-30, 2020. Xi’an, China.

Liang Wu, Diane Hu, Liangjie Hong, Huan Liu. “Turning Clicks into Purchases: Revenue Optimization for Product Search in E-Commerce”, ACM SIGIR Conference on Research and Development in Information Retrieval (**SIGIR 2018**), July 8-12, 2018. Ann Arbor, Michigan, USA.

Liang Wu, Huan Liu. “Debunking Rumors in Social Media: A Timely Approach”, 11th ACM Conference on Web Science (**WebSci 2019**), June 30 – July 3, 2019. Boston, MA, USA.

Jundong Li, **Liang Wu**, Ruocheng Guo, and Huan Liu. “Multi-Level Network Embedding with Boosted Low-Rank Matrix Approximation”, The 2019 IEEE/ACM International Conference on Advances in Social Networks Analysis and Mining (**ASONAM 2019**), Vancouver, Canada, 27-30 August, 2019.

Liang Wu, Jundong Li, Fred Morstatter, Huan Liu. “Toward Relational Learning with Misinformation”, In SIAM International Conference on Data Mining (**SDM 2018**), San Diego, CA, USA, May 2018.

Liang Wu, and Huan Liu. “Revealing Fake-News Footprints: Characterizing Social Media Messages by How They Propagate”, In ACM International Conference on Web Search and Data Mining (**WSDM 2018**), Los Angeles, CA, USA, February 2018.

Liang Wu, Xia Hu, Fred Morstatter, and Huan Liu. “Adaptive Spammer Detection with Sparse Group Modeling”. In 11th International AAAI Conference on Web and Social Media (**ICWSM 2017**), Montreal, Canada, May, 2017.

Liang Wu, Xia Hu, and Huan Liu. “Early Identification of Personalized Trending Topics in Microblogging”, poster paper. In 11th International AAAI Conference on Web and Social Media (**ICWSM 2017**), Montreal, Canada, May, 2017.

Liang Wu, Xia Hu, Fred Morstatter, and Huan Liu. “Detecting Camouflaged Content Polluters”, poster paper. In 11th International AAAI Conference on Web and Social Media (**ICWSM 2017**), Montreal, Canada, May, 2017.

Liang Wu, Jundong Li, Xia Hu, and Huan Liu. “Gleaning Wisdom from the Past: Early Detection of Emerging Rumors in Social Media”, In SIAM International Conference on Data Mining (**SDM 2017**), Houston, USA, April 2017.

Liang Wu, Xia Hu, and Huan Liu. “Relational Learning with Social Status Analysis”, In ACM International Conference on Web Search and Data Mining (**WSDM 2016**), San Francisco, USA, February 2016.

Liang Wu, Liang Du, Bo Liu, Guandong Xu, Yong Ge, Yanjie Fu, Jianhui Li, Yuanchun Zhou, and Hui Xiong. “Heterogeneous Metric Learning with Content-based Regularization for Software Artifact Retrieval”, In IEEE International Conference on Data Mining (**ICDM 2014**), pp. 610-619, Shen Zhen, China, December 2014.

Liang Wu, Alvin Chin, Guandong Xu, Liang Du, Xia Wang, Kangjian Meng, Yonggang Guo, and Yuanchun Zhou. “Who Will Follow Your Shop? Exploiting Multiple Information Sources in Finding Followers.” In Database Systems for Advanced Applications (**DASFAA 2013**), 2013.

Liang Wu, Yuanchun Zhou, Fei Tan, Fenglei Yang, and Jianhui Li. “Generating Syntactic Tree Templates for Feature-based Opinion Mining.” In Advanced Data Mining and Applications (**ADMA 2011**), pp. 1-12. Springer Berlin Heidelberg, 2011.

Jundong Li, **Liang Wu**, Harsh Dani, and Huan Liu. “Unsupervised Personalized Feature Selection.”. The 32nd AAAI Conference on Artificial Intelligence (**AAAI 2018**), Feb 2-7, 2018. New Orleans, LA, USA.

Jundong Li, Kewei Cheng, **Liang Wu**, and Huan Liu. “Streaming Link Prediction on Dynamic Attributed Networks.” The 11th ACM International Conference on Web Search and Data Mining (**WSDM 2018**), Feb 6-8, 2018. Los Angeles, California, USA.

Jundong Li, **Liang Wu**, Osmar R. Zaiane, and Huan Liu. “Toward Personalized Relational Learning”. SIAM International Conference on Data Mining (**SDM 2017**), April, 2017. Houston, Texas.

Justin Sampson, Fred Morstatter, **Liang Wu**, and Huan Liu. “Leveraging the Implicit Structure within Social Media for Emergent Rumor Detection” In The 25th ACM International Conference on Information and Knowledge Management (**CIKM 2016**), Indianapolis, Indiana, USA, 24 - 28 October, 2016.

Fred Morstatter, **Liang Wu**, Tahora H. Nazer, Kathleen M. Carley, and Huan Liu. “Bot Detection: The Importance of Recall” In The 2016 IEEE/ACM International Conference on Advances in Social Networks Analysis and Mining (**ASONAM 2016**), San Francisco, CA, USA, 18 - 21 August, 2016.

Jundong Li, Xia Hu, **Liang Wu**, and Huan Liu. “Robust Unsupervised Feature Selection on Networked Data”. SIAM International Conference on Data Mining (**SDM 2016**), May 5-7, 2016. Miami, Florida.

Qi Hu, Keke Cai, Weishan Dong, **Liang Wu**, Guanqun Zhang, and Heyuan Huang. “Content Mapping Recommendation for IT Compliance Automation”. 17th International Workshop on the Web and Databases (**WebDB 2014**), 2014.

Qiuxiang Dong, Zhi Guan, **Liang Wu**, and Zhong Chen. “Fuzzy Keyword Search Over Encrypted Data in the Public Key Setting.” In Web-Age Information Management (**WAIM 2013**), pp. 729-740, 2013.

Journal Papers

Liang Wu, Fred Morstatter, and Huan Liu. “SlangSD: Building and Using a Sentiment Dictionary of Slang Words for Short-Text Sentiment Classification.” Journal of Language Resources and Evaluation (2018).

Fred Morstatter, **Liang Wu**, Uraz Yavanoglu, Stephen S. Corman, and Huan Liu. “Identifying Framing Bias in Online News.” ACM Transactions on Social Computing.

Yuanchun Zhou, Mingjie Tang, Weike Pan, Jianhui Li, Weihang Wang, Jing Shao, **Liang Wu**, Qiang Yang, and Baoping Yan. “Bird Flu Outbreak Prediction via Satellite Tracking.” IEEE Intelligent System Magazine, (2014).

Yuwei Wang, Yuanchun Zhou, Ying Liu, Ze Luo, Danhuai Guo, Jing Shao, Fei Tan, **Liang Wu**, Jianhui Li, Baoping Yan. A grid-based clustering algorithm for wild bird distribution, Frontiers of Computer Science 7(4): 475-485 (2013).

Workshop Papers

Liang Wu, Fred Morstatter, Daniel J. Baird, Justin Sampson, Kai Shu, and Huan Liu. “Integrating Interactive and Computational Approaches for News Understanding” In SBP Grand Data Challenge, International Conference on Social Computing, Behavioral-Cultural Modeling, and Prediction (SBP 2016), June 28 - July 1, 2016. Washington, D.C.

Liang Wu, Bin Cao, Yuanchun Zhou, and Jianhui Li. “Improving Query Suggestion through Noise Filtering and Query Length Prediction”. Companion publication of the International Conference on World Wide Web (WWW 2014): 399-400.

Liang Wu, Alvin Chin, Yuanchun Zhou, Xia Wang, Kangjian Meng, Yonggang Guo, and Jianhui Li. “Context-aware Prediction of User’s First Click.” In KDD 2012 Workshop on Context Discovery and Data Mining, ACM, 2012.

Bo Liu, **Liang Wu**, Qiuxiang Dong, and Yuanchun Zhou. “Large-scale Heterogeneous Program Retrieval through Frequent Pattern Discovery and Feature Correlation Analysis”. IEEE BigData 2014.

Bo Liu, **Liang Wu**, Jianqiang Li, and Ji-Jiang Yang. “Exploiting Incremental Reasoning in Healthcare Based on Hadoop and Amazon Cloud”, In Workshops at AAAI 2014.

REFERENCES

Available Upon Request