

# Xueqing Liu

Department of Computer Science  
Stevens Institute of Technology  
250 Gateway South,  
Hoboken, NJ, USA

Email: [xliu127@stevens.edu](mailto:xliu127@stevens.edu)  
Home: <http://liususan091219.github.io/>

## Education

- 2012–2019    Ph.D., Computer Science, University of Illinois Urbana-Champaign  
Thesis Title: Data-driven assistance for user decision making on mobile devices  
Advisors: Dr. ChengXiang Zhai and Dr. Tao Xie
- 2008–2012    B.Eng., Special Pilot Computer Science Class program (Yao Class)  
Tsinghua University

## Employments

- 2020–now    Assistant Professor, Computer Science, Stevens Institute of Technology
- 2019–2019    Research Intern, Allen Institute of Artificial Intelligence
- 2015–2015    Research Intern, Walmart Labs
- 2014–2014    Research Intern, Microsoft Research
- 2011–2012    Research Intern, Microsoft Research Asia

## Teaching

2023 Spring	CS589 Text Mining and Information Retrieval	SIT
2023 Spring	CS541 Artificial Intelligence	SIT
2022 Fall	CS589 Text Mining and Information Retrieval	SIT
2022 Spring	CS284 Data Structure	SIT
2021 Fall	CS589 Text Mining and Information Retrieval	SIT
2021 Spring	CS284 Data Structure	SIT
2020 Fall	CS589 Text Mining and Information Retrieval	SIT
2020 Spring	CS284 Data Structure	SIT

## PhD Advising

2020-now	Guanqun Yang, PhD student	Stevens Institute of Technology
----------	---------------------------	---------------------------------

## Publications

Google scholar (395 citations to date): <https://scholar.google.com/citations?user=g5W4khgAAAAJ>

## Journals

- [1] Yangqiu Song, Shixia Liu, **X. Liu**, Haixun Wang. “Automatic Taxonomy Construction from Keywords via Scalable Bayesian Rose Trees”. *IEEE Transactions on Knowledge and Data Engineering (TKDE)*, February 2015

## Conferences

- [1] Guanqun Yang, Mirazul Haque, Qiaochu Song, Wei Yang, **X. Liu**. “TestAug: A Framework for Augmenting Capability-based NLP Tests”. in *Proceedings of The 29th International Conference on Computational Linguistics (COLING 2022)*, Gyeongju, Republic of Korea, October 2022
- [2] **X. Liu**, Chi Wang. “An Empirical Study on Hyperparameter Optimization for Fine-Tuning Pre-trained Language Models”. in *Proceedings of the Joint Conference of the Annual Meeting of the Association for Computational Linguistics and the International Joint Conference on Natural Language Processing (ACL-IJCNLP 2021)*, Virtual Conference, August 2021
- [3] Jiaqi Guo, Qian Liu, Jian-Guang Lou, Zhenwen Li, **X. Liu**, Tao Xie, Ting Liu. “Benchmarking Meaning Representations in Neural Semantic Parsing”. in *Proceedings of the Conference on Empirical Methods in Natural Language Processing (EMNLP 2020)*, Virtual Conference, November 2021
- [4] **X. Liu**, Yue Leng, Wei Yang, Wenyu Wang, ChengXiang Zhai and Tao Xie. “An Empirical Study on Android Runtime Permission Rationales”. in *Proceedings of the IEEE Symposium on Visual Languages and Human-Centric Computing (VL/HCC 2018)*, Lisbon, Portugal, October 2018

- [5] **X. Liu**, Yue Leng, Wei Yang, ChengXiang Zhai and Tao Xie. “Mining Android App Description for Permission Requirements Recommendation”. in *Proceedings of the 26th International Requirement Engineering Conference (RE 2018)*, Banff, Canada, August 2018
- [6] Yinan Zhang, **X. Liu** and ChengXiang Zhai. “Information Retrieval Evaluation as Search Simulation: A General Formal Framework for IR Evaluation”. in *Proceedings of the ACM SIGIR International Conference on the Theory of Information Retrieval (ICTIR 2017)*, Amsterdam, Netherlands, October 2017
- [7] **X. Liu**, ChengXiang Zhai, Wei Han, Onur Gungor. “Numerical Facet Range Partition: Evaluation Metric and Methods”. in *Proceedings of the International Conference on World Wide Web Companion (WWW 2017), Industry Track*, Perth, Australia, April 2017
- [8] Hao Ma, **X. Liu**, Zhihong Shen. “User Fatigue in Online News Recommendation”. in *Proceedings of the International Conference on World Wide Web Companion (WWW 2016). Industry Track*, Montreal, Canada, April 2016
- [9] Chi Wang, **X. Liu**, Yanglei Song, Jiawei Han. “Towards Interactive Construction of Topical Hierarchy: A Recursive Tensor Decomposition Approach”. in *Proceedings of the ACM SIGKDD Conference on Knowledge Discovery and Data Mining (KDD 2015)*, Sydney, Australia, August 2015
- [10] Chi Wang, **X. Liu**, Yanglei Song, Jiawei Han. “Scalable Moment-based Inference for Latent Dirichlet Allocation”. in *Proceedings of the European Conference on Machine Learning and Principles and Practice of Knowledge Discovery in Databases (ECML/PKDD 2014)*, Nancy, France, September 2014
- [11] **X. Liu**, Yangqiu Song, Shixia Liu, Haixun Wang. “Automatic Taxonomy Construction from Keywords”. in *Proceedings of the ACM SIGKDD Conference on Knowledge Discovery and Data Mining (KDD 2012)*, Beijing, China, August 2012

## Theses and dissertations

- [1] **X. Liu**. (2019). Data-driven assistance for user decision making on mobile devices. Ph.D. Dissertation. University of Illinois. Retrieved from <https://www.ideals.illinois.edu/handle/2142/106259>

## Workshop&Posters

- [1] Guanqun Yang, Shay Dineen, Zhipeng Lin, **X. Liu**. “Few-Sample Named Entity Recognition for Security Vulnerability Reports by Fine-Tuning Pre-Trained Language Models”. in *Proceedings of the 2nd International Workshop on Deployable Machine Learning for Security Defense (MLHat@KDD 2021)*, Virtual Conference, August 2021
- [2] **X. Liu**, Chi Wang, Yue Leng, ChengXiang Zhai. “LinkSO: A Dataset for Learning to Retrieve Similar Question Answer Pairs on Software Development Forums”. in *Proceedings of the ACM SIGSOFT International Workshop on NLP for Software Engineering (NL4SE@FSE 18)*, Lake Buena Vista, Florida, November 2018
- [3] Jiayi Cao, Angello Astorga, Siwakorn Srisakaokul, Zhengkai Wu, **X. Liu**, Xusheng Xiao, and Tao Xie. “Visualizing Path Exploration to Assist Problem Diagnosis for Structural Test Generation”. in *Proceedings of the IEEE Symposium on Visual Languages and Human-Centric Computing (VL/HCC 2018), Posters*, Lisbon, Portugal, October 2018

## Work in Progress

- [1] Guanqun Yang, **X. Liu**. “Paraphrasing with Large Language Models Improves NLP Testing”. *under review*
- [2] **X. Liu**, et al. “HateModerate: A Dataset for Testing and Classifying Hate Speech under the Community Standards Guidelines”. *under review*
- [3] Chi Wang, **X. Liu**, Ahmed . “Cost-Effective Hyperparameter Optimization for Large Language Model Generation Inference”. *under review*

## Talks/Presentations

- [1] FLAML: A Fast Library for AutoML & Tuning. *Tutorial at AAAI 2023. To appear.*
- [2] We need to talk about random seeds. *Co-host for Birds-of-a-Feather sessions at EMNLP 2022.*
- [3] Automate machine learning. *Guest lecture at Washington University at St. Louis CSE527A*
- [4] FLAML: A Fast Library for AutoML & Tuning. *Tutorial at KDD 2022.*
- [5] Data-Driven Optimization for User Interaction in the Mobile Era: Information Access, Security and Beyond, *Job Interview talk at Shanghai Jiaotong University, Tsinghua University IIIS, Peking University, Iowa State University, Stevens Institute of Technology, Case Western Reserve University, Microsoft, 2019.*
- [6] An Empirical Study on Android Runtime Permission Rationales, *Conference talk at VL/HCC 2018.*
- [7] Mining Android App Description for Permission Requirements Recommendation, *Conference talk at RE 2018.*
- [8] Numerical Facet Range Partition: Evaluation Metric and Methods, *Conference talk at WWW 2017.*

## Professional Activities

- Session chair for the AAAI 2023 session “Interpretability and Analysis of NLP Models”.
- Program committee, The 37th AAAI Conference on Artificial Intelligence (AAAI 2023).
- Reviewer, The Annual Conference of the North American Chapter of the Association for Computational Linguistics (NAACL 2022).
- Reviewer, the Annual Meeting of the Association for Computational Linguistics (ACL 2022).
- Program committee/reviewer, Joint Conference of the Annual Meeting of the Association for Computational Linguistics and the International Joint Conference on Natural Language Processing (ACL-IJCNLP 2021).
- Panelist, NSF Phase I: Digital Health CDS+Medical Diagnostics II Virtual Panel, 2020
- Reviewer, Conference on Empirical Methods in Natural Language Processing (EMNLP 2020).
- Review, IEEE Transactions on Big Data, 2020.

- Reviewer, Annual Conference of the North American Chapter of the Association for Computational Linguistics (NAACL 2019).
- Reviewer, Empirical Software Engineering (EMSE 2019).
- Reviewer, The ACM Transactions on Interactive Intelligent Systems (TiiS 2019).
- Subreviewer, ACM Conference on Computer and Communications Security (CCS), 2018/2019.
- Subreviewer, Annual Conference of the North American Chapter of the Association for Computational Linguistics (NAACL), 2018.
- Subreviewer, IEEE Transactions on Knowledge and Data Engineering (TKDE), 2016.
- Subreviewer, The ACM Transactions on Information Systems (TOIS), 2014.

## Selected Honours and Awards

2018	NSF Travel Grant
2017	UIUC Graduate College Conference Travel Grant
2011	Huang Yicong Scholarship, Tsinghua University (1 out of 33)
2007	High School Math League, China, <b>provincial first price</b>
2006	Girls' Math Olympic, China, <b>silver medal</b>