

Jingbo Shang

PH.D. STUDENT @ UIUC

201 N. Goodwin Avenue, Room 2119, Urbana, IL 61801, USA

☎ (+1) 217-898-9691 | ✉ shang7@illinois.edu | 🏠 <https://shangjingbo1226.github.io/>

RESEARCH INTERESTS

Machine Learning • Data Mining • Natural Language Understanding

My research focuses on developing principled data-driven approaches, with little human curation and labeling, to transform unstructured text data into structured heterogeneous information networks, on which actionable knowledge can be further uncovered flexibly and effectively based on user's instructions.

EDUCATION

University of Illinois, Urbana-Champaign

PH.D. IN COMPUTER SCIENCE

May 2019 (Expected)

- Committee: Jiawei Han (chair), Tarek Abdelzaher, Jian Peng, Filip Korn.

University of Illinois, Urbana-Champaign

MASTER IN COMPUTER SCIENCE

April 2017

Shanghai Jiao Tong University

B.ENG. IN COMPUTER SCIENCE

Jun 2014

EMPLOYMENT

Two Sigma Investments LP

QUANTITATIVE RESEARCH INTERN

New York City, NY, USA

Jun 2018 – Aug 2018

Google Research

RESEARCH INTERN

New York City, NY, USA

May 2017 – Aug 2017

Google

SOFTWARE ENGINEERING INTERN

New York City, NY, USA

May 2016 – Aug 2016

Microsoft Research Asia

RESEARCH INTERN

Beijing, China

Aug 2013 – Feb 2014

SELECTED HONORS & AWARDS

2018	World Champion of IEEEExtreme 12.0
2018	The Web Conference (WWW) Best Poster Award Runner-up, one of three
2018	C.W. Gear Outstanding Graduate Award, sole winner in UIUC
2017	Google Ph.D. Fellowship, North American sole winner on Structured Data and Database Management
2015	Grand prize, Yelp Dataset Challenge, for my innovative phrase mining methods
2015	Runner-up, Prostate Cancer DREAM challenge
2014	Computer Science Excellence Scholarship
2014	Excellent Undergraduate Thesis Award
2014	Zhiyuan Excellent Student Scholarship
2013	2nd Place, Gold Medal, Asian Champion in ACM/ICPC World Finals
2012	National Scholarship, China, top-1%

SCIENCE OUTREACH & SELECTED MEDIA COVERAGE

2017	CS@Illinois News on Two Illinois Graduate Students Win Google Fellowship.
2017	Google AI Blog on announcing 2017 Google PhD fellows.
2017	CS@Illinois News on Illinois Team Tests Problem-Solving Skills at ICPC 2017. I'm the team's coach.
2016	CS@Illinois News on Illinois Team Advances to ICPC World Finals. I'm the team's coach.
2016	TripAdvisor Blog on Mining Text for Review Snippets. My phrase mining methods are utilized and appreciated.
2016	Yelp on Winners of Yelp Dataset Challenges. I'm Round 5 winner.
2015	TripAdvisor Blog on Using NLP to Find "Interesting" Collections of Hotels. My phrase mining methods are utilized and appreciated.
2015	National Institute of Health BD2K Center on UIUC Teams Won Twice in the Recent DREAM Prostate Cancer Challenges.

PROFESSIONAL SERVICE

PROGRAM COMMITTEE

North American Chapter of the Association for Computational Linguistics (**NAACL-HLT**), 2019
SIAM International Conference on Data Mining (**SDM**), 2018
International Conference on Information and Knowledge Management (**CIKM**), 2017–2018

JOURNAL REVIEWER

IEEE Transactions on Knowledge and Data Engineering (**TKDE**)
IEEE Transactions on Knowledge Discovery from Data (**TKDD**)
ACM Transactions on Intelligent Systems and Technology (**TIST**)
IEEE Transactions on Big Data (**TBD**)

TEACHING & COACHING

Instructor	UIUC
CS491 WF, ADVANCED COMPETITIVE ALGORITHMIC PROGRAMMING	<i>Springs in 2015–2018</i>
Instructor	UIUC
CS491 CAP, INTRO TO COMPETITIVE ALGORITHMIC PROGRAMMING	<i>Falls in 2015–2018</i>
Teaching Assistant	Coursera×UIUC
DATA MINING SPECIALIZATION, COURSERA×UIUC	<i>Fall and Spring in 2015</i>
Coach	UIUC
UNIVERSITY OF ILLINOIS AT URBANA-CHAMPAIGN ACM-ICPC TEAM	<i>2014 – Present</i>
Assistant Coach	Shanghai Jiao Tong University
SHANGHAI JIAO TONG UNIVERSITY ACM-ICPC TEAM	<i>2011 – 2014</i>

TALKS

INVITED TALKS

- [3] Tsinghua University, Beijing, China, April 2018
- [2] Alibaba Group, Beijing, China, April 2018
- [1] CooTek Inc., Shanghai, China, March 2017

CONFERENCE TUTORIALS

- [4] Towards Multidimensional Analysis of Text Corpora
Jingbo Shang, Chao Zhang, Jiaming Shen, and Jiawei Han
International Conference on Knowledge Discovery and Data Mining (KDD), 2018
- [3] Mining Entity-Relation-Attribute Structures from Massive Text Data
Jingbo Shang, Xiang Ren, Meng Jiang, and Jiawei Han
International Conference on Knowledge Discovery and Data Mining (KDD), 2017
- [2] Building Structured Databases of Factual Knowledge from Massive Text Corpora
Xiang Ren, Meng Jiang, Jingbo Shang and Jiawei Han
International Conference on Management of Data (SIGMOD), 2017
- [1] Constructing Structured Information Networks from Massive Text Corpora
Xiang Ren, Meng Jiang, Jingbo Shang and Jiawei Han
The Web Conference (WWW), 2017

PUBLICATIONS

BOOK

- [31] Phrase Mining from Massive Text and Its Applications
Jialu Liu, Jingbo Shang, and Jiawei Han
Synthesis Lectures on Data Mining and Knowledge Discovery, 2017

PREPRINTS

- [30] Contrast Subgraph Mining from Coherent Cores
Jingbo Shang, Xiyao Shi, Meng Jiang, Liyuan Liu, Timothy Hanratty and Jiawei Han
arXiv preprint arXiv:1802.06189, 2018
- [29] Meta-Path Guided Embedding for Similarity Search in Large-Scale Heterogeneous Information Networks
Jingbo Shang, Meng Qu, Jialu Liu, Lance M. Kaplan, Jiawei Han, and Jian Peng
arXiv preprint arXiv:1610.09769, 2016

JOURNAL PAPERS

- [28] Automated Phrase Mining from Massive Text Corpora
Jingbo Shang, Jialu Liu, Meng Jiang, Xiang Ren, Clare R Voss, and Jiawei Han
IEEE Transactions on Knowledge and Data Engineering (TKDE) 30(10), 1825-1837, 2018.
Open-sourced software received over 300 stars on Github as of Nov 2018.
- [27] DPPred: An Effective Prediction Framework with Concise Discriminative Patterns
Jingbo Shang, Meng Jiang, Wenzhu Tong, Jinfeng Xiao, Jian Peng, and Jiawei Han
IEEE Transactions on Knowledge and Data Engineering (TKDE), 30(7), 1226-1239, 2018.
- [26] Cross-type Biomedical Named Entity Recognition with Deep Multi-Task Learning
Xuan Wang, Yu Zhang, Xiang Ren, Yuhao Zhang, Marinka Zitnik, Jingbo Shang, Curtis Langlotz, and Jiawei Han
Accepted by Bioinformatics, 2018.
- [25] Detection of Complexes in Biological Networks via Diversified Dense Subgraphs Mining
Xiuli Ma, Guangyu Zhou, Jingbo Shang, Jingjing Wang, Jian Peng, Jiawei Han
Journal of Computational Biology 24(9), 923-941, 2017.
- [24] Stepwise Distributed Open Innovation Contests for Software Development-Acceleration of Genome-Wide Association Analysis

Andrew Hill, Po-Ru Loh, Ragu B Bharadwaj, Pascal Pons, Jingbo Shang, Eva Guinan, Karim Lakhani, Iain Kilty, and Scott A Jelinsky
GigaScience 6(5), 1-10, 2017.

DEMO PAPERS

- [23] AutoNet: Automated Network Construction and Exploration System from Domain-Specific Corpora
Jingbo Shang, Qi Zhu, Jiaming Shen, Xuan Wang, Xiaotao Gu, Lance Kaplan, Timothy Harratty and Jiawei Han
In Proc. of *International Conference on Knowledge Discovery and Data Mining (KDD)*, 2018.
- [22] SetSearch+: Entity-Set-Aware Search and Mining for Scientific Literature
Jiaming Shen, Jinfeng Xiao, Yu Zhang, Carl Yang, Jingbo Shang, Jinda Han, Saurabh Sinha, Peipei Ping, Richard Weinshilboum, Zhiyong Lu and Jiawei Han
In Proc. of *International Conference on Knowledge Discovery and Data Mining (KDD)*, 2018.

CONFERENCE PAPERS

- [21] Learning Named Entity Tagger using Domain-Specific Dictionary
Jingbo Shang^{*}, Liyuan Liu^{*}, Xiaotao Gu, Xiang Ren, Teng Ren and Jiawei Han (* **Equal Contribution**)
In Proc. of *Empirical Methods in Natural Language Processing (EMNLP)*, 2018.
- [20] Efficient Contextualized Representation: Language Model Pruning for Sequence Labeling
Liyuan Liu, Xiang Ren, Jingbo Shang, Xiaotao Gu, Jian Peng and Jiawei Han
In Proc. of *Empirical Methods in Natural Language Processing (EMNLP)*, 2018.
- [19] Investigating Rumor News Using Agreement-Aware Search
Jingbo Shang, Tianhang Sun, Jiaming Shen, Xingbang Liu, Anja Gruenheid, Flip Korn, Adam Lelkes, Cong Yu, Jiawei Han
In Proc. of *International Conference on Information and Knowledge Management (CIKM)*, 2018.
- [18] Entity Set Search of Scientific Literature: An Unsupervised Ranking Approach
Jiaming Shen, Jinfeng Xiao, Xinwei He, Jingbo Shang, Saurabh Sinha and Jiawei Han
In Proc. of *International Conference on Research and Development in Information Retrieval (SIGIR)*, 2018.
- [17] Open Information Extraction with Global Structure Constraints (poster paper)
Qi Zhu, Xiang Ren, Jingbo Shang, Yu Zhang, Frank F. Xu and Jiawei Han
In Proc. of *The Web Conference (WWW)*, 2018.
Received Best Poster Award runner-up
- [16] Empower Sequence Labeling with Task-Aware Neural Language Model
Liyuan Liu, Jingbo Shang, Frank Xu, Xiang Ren, Huan Gui, Jian Peng, Jiawei Han
In Proc. of *Artificial Intelligence (AAAI)*, 2018.
Open-sourced software received over 500 stars on Github as of Nov 2018.
- [15] Detecting Multiple Periods and Periodic Patterns in Event Time Sequences
Quan Yuan, Jingbo Shang, Xin Cao, Chao Zhang, Xinhe Geng, Jiawei Han
In Proc. of *International Conference on Information and Knowledge Management (CIKM)*, 2017.
- [14] An Attention-based Collaboration Framework for Multi-View Network Representation Learning
Meng Qu, Jian Tang, Jingbo Shang, Xiang Ren, Ming Zhang, Jiawei Han
In Proc. of *International Conference on Information and Knowledge Management (CIKM)*, 2017.
- [13] SetExpan: Corpus-based Set Expansion via Context Feature Selection and Rank Ensemble
Jiaming Shen, Zeqiu Wu, Dongming Lei, Jingbo Shang, Xiang Ren, Jiawei Han
In Proc. of *European Conference on Machine Learning and Principles and Practice of Knowledge Discovery in Databases (ECMLPKDD)*, 2017.

- [12] MetaPAD: Meta Pattern Discovery from Massive Text Corpora
Meng Jiang, Jingbo Shang, Taylor Cassidy, Xiang Ren, Lance M Kaplan, Timothy P Hanratty, and Jiawei Han
In Proc. of *International Conference on Knowledge Discovery and Data Mining (KDD)*, 2017.
- [11] DWCoX: A Density-Weighted COX Model for Outlier-Robust Prediction of Prostate Cancer Survival
Jinfeng Xiao, Sheng Wang, Jingbo Shang, Henry Lin, Doris Xin, Xiang Ren, Jiawei Han, and Jian Peng
F1000 Research, 2016
- [10] Data-Driven Contextual Valence Shifter Quantification for Multi-Theme Sentiment Analysis
Hongkun Yu*, Jingbo Shang*, Meichun Hsu, Malú Castellanos and Jiawei Han (* **Equal Contribution**)
In Proc. of *International Conference on Information and Knowledge Management (CIKM)*, 2016.
- [9] Mining Discriminative Patterns to Predict Health Status for Cardiopulmonary Patients
Qian Cheng, Jingbo Shang, Joshua Juen, Jiawei Han and Bruce Schatz
In Proc. of *ACM Conference on Bioinformatics, Computational Biology, and Health Informatics (ACM-BCB)*, 2016.
- [8] MACFP: Maximal Approximate Consecutive Frequent Pattern Mining under Edit Distance
Jingbo Shang, Jian Peng, Jiawei Han
In Proc. of *SIAM International Conference on Data Mining (SDM)*, 2016.
- [7] DPClass: an Effective but Concise Discriminative Patterns-Based Classification Framework
Jingbo Shang, Wenzhu Tong, Jian Peng, Jiawei Han
In Proc. of *SIAM International Conference on Data Mining (SDM)*, 2016.
- [6] Representing Documents via Latent Keyphrase Inference
Jialu Liu, Xiang Ren, Jingbo Shang, Taylor Cassidy, Clare Voss and Jiawei Han
In Proc. of *The Web Conference (WWW)*, 2016.
- [5] Detecting Urban Black Holes Based on Human Mobility Data
Liang Hong, Yu Zheng, Duncan Yung, Jingbo Shang, Lei Zou
In Proc. of *International Conference on Advances in Geographical Information Systems (SIGSPATIAL)*, 2015.
- [4] Mining Quality Phrases from Massive Text Corpora
Jialu Liu*, Jingbo Shang*, Chi Wang, Xiang Ren, Jiawei Han (* **Equal Contribution**)
In Proc. of *International Conference on Management of Data (SIGMOD)*, 2015.
Won Grand Prize of Yelp Data Challenges in 2015.
- [3] A Parallel and Efficient Algorithm for Learning to Match
Jingbo Shang, Tianqi Chen, Zhengdong Lu, Hang Li, Yong Yu
In Proc. of *International Conference on Data Mining (ICDM)*, 2014.
- [2] Constrained Question Recommendation in MOOCs via Submodularity
Diyi Yang, Jingbo Shang, Carolyn Rosé
In Proc. of *International Conference on Information and Knowledge Management (CIKM)*, 2014.
- [1] Inferring Gas Consumption and Pollution Emission of Vehicles Throughout a City
Jingbo Shang, Yu Zheng, Wenzhu Tong, Eric Chang, Yong Yu
In Proc. of *International Conference on Knowledge Discovery and Data Mining (KDD)*, 2014.