

# Liyuan Liu

*"I saw the angel in the marble and carved until I set him free. - Michelangelo"*

Siebel Center for Computer Science Rm 2119B, 201 N. Goodwin Avenue, Urbana, IL 61801, USA

☎ (+1) 217-904-5914 | ✉ llychinalz@gmail.com | 🏠 liyuanlucasliu.github.io | 📷 LiyuanLucasLiu

## RESEARCH INTEREST

Understand the underlying mechanism of neural NLP models & Make the training more automatic, robust, and thus more efficient.

## EDUCATION

### UNIVERSITY OF ILLINOIS, URBANA-CHAMPAIGN (UIUC)

PH.D. IN COMPUTER SCIENCE, EXPECTED JUNE. 2021

- Advisor: Prof. Jiawei Han

Illinois, USA

September 2016 – Present

### UNIVERSITY OF SCIENCE AND TECHNOLOGY OF CHINA (USTC)

B.E. IN COMPUTER SCIENCE

- Advisor: Prof. Linli Xu
- Shortlisted for the Guo Moruo Scholarship and graduated *summa cum laude*.

Hefei, China

September 2012 – June 2016

## SELECTED HONORS & AWARDS

Winner of the Topcoder Arabic NER Challenge	2018
• Ranked 1st among 137 registrants and 220 submissions.	
Guo Moruo Scholarship	2015
• Highest honor for USTC undergraduate students.	
Google Excellent Scholarship	2015
• Only 58 graduate and undergraduate students shortlisted nationwide.	
Data Mining Group Research Award	2019, 2018, 2017
3th Place at WSDM Cup 2017 (Vandalism Detection Task)	2017
Samsung Scholarship	2015
Tencent Innovative Scholarship	2014
Seagate Scholarship	2013
Scholarship for Outstanding Students	2012, 2013

## EMPLOYMENT

### Deep Learning Group @ MICROSOFT RESEARCH REDMOND

PART-TIME RESEARCHER, ADVISOR: DR. XIAODONG GU & DR. JIANFENG GAO

IL, USA

December 2019 – PRESENT

### D365 AI & MSR @ MICROSOFT

RESEARCH INTERN, ADVISOR: DR. WEIZHU CHEN & DR. JIANFENG GAO

WA, USA

May 2019 – August 2019

### AllenNLP @ AI2

RESEARCH INTERN, ADVISOR: DR. MATTHEW E. PETERS

WA, USA

May 2018 – August 2018

### Social Computing Group @ MICROSOFT RESEARCH ASIA

RESEARCH INTERN, ADVISOR: DR. RUIHUA SONG

Beijing, China

July 2015 – May 2016

### Laboratory of Semantic Computing and Data Mining @ USTC

UNDERGRADUATE RESEARCHER, ADVISOR: PROF. LINLI XU

Anhui, China

October 2013 – June 2015

## PROFESSIONAL SERVICE

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**PC Member** ACL2020, WWW2020, AAAI2020, IJCAI2020, EMNLP2019, LLD2019, ACL2019, NAACL2019, AAAI2019, EMNLP2018

## SELECTED PROJECTS & PUBLICATIONS

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**Project Highlights** RAdam (2k stars on the Github); LM-LSTM-CRF (700 stars on the Github); Torch-Scope (30k downloads).

\*indicates equal contribution.

- [1] **Liyuan Liu**, Haoming Jiang, Pengcheng He, Weizhu Chen, Xiaodong Liu, Jianfeng Gao, and Jiawei Han. “On the Variance of the Adaptive Learning Rate and Beyond.” in *Proc. of 2020 Int. Conf. on Learning Representations (ICLR’20)*, to appear.
- [2] Jingbo Shang, Xinyang Zhang, **Liyuan Liu**, Sha Li, and Jiawei Han. “NetTaxo: Automated Topic Taxonomy Construction from Large-Scale Text-Rich Network”, in *Proc. 2020 Int. World Wide Web Conf. (WWW’20)*, Taip (Oral)
- [3] Zihan Wang\*, Jingbo Shang\*, **Liyuan Liu\***, Lihao Lu, Jiacheng Liu, and Jiawei Han. “CrossWeigh: Training Named Entity Tagger from Imperfect Annotations” in *Proc. of 2019 Conf. on Empirical Methods in Natural Language Processing (EMNLP’19)*, Hong Kong, China, Nov. 2019 (Oral, Long).
- [4] Qinyuan Ye\*, **Liyuan Liu\***, Maosen Zhang, and Xiang Ren. “Looking Beyond Label Noise: Shifted Label Distribution Matters in Distantly Supervised Relation Extraction” in *Proc. of 2019 Conf. on Empirical Methods in Natural Language Processing (EMNLP’19)*, Hong Kong, China, Nov. 2019 (Oral, Long).
- [5] **Liyuan Liu**, Jingbo Shang, and Jiawei Han. “Arabic Named Entity Recognition: What Works and What’s Next” in *Proc. of the 4th Arabic Natural Language Processing Worksho (WANLP 2019)*, co-located with ACL 2019, Florence, Italy, July 2019 (Oral).
- [6] Ying Lin, **Liyuan Liu**, Heng Ji, Dong Yu, and Jiawei Han. “Reliability-aware Dynamic Feature Composition for Name Tagging” in *Proc. of the 57th Annual Meeting of the Association for Computational Linguistics (ACL’19)*, Florence, Italy, Jul. 2019 (Oral, Long).
- [7] Jingbo Shang, Jiaming Shen, **Liyuan Liu**, and Jiawei Han, “Constructing and Mining Heterogeneous Information Networks from Massive Text”, Conference tutorial at *2019 ACM SIGKDD Int. Conf. on Knowledge Discovery and Data Mining (KDD’19)*, Anchorage, AK, Aug. 2019.
- [8] Yujin Yuan, **Liyuan Liu**, Siliang Tang, Zhongfei Zhang, Yueting Zhuang, Fei Wu, and Xiang Ren. “Cross-relation Cross-bag Attention for Distantly-supervised Relation Extraction” in *Proc. of 2019 AAAI Conf. on Artificial Intelligence (AAAI’19)*, Honolulu, Hawaii, Jan. 2019.
- [9] Jingbo Shang\*, **Liyuan Liu\***, Xiaotao Gu, Xiang Ren, Teng Ren, and Jiawei Han “Learning Named Entity Tagger using Domain-Specific Dictionary.” in *Proc. of 2018 Conf. on Empirical Methods in Natural Language Processing (EMNLP’18)*, Brussels, Belgium, Oct. 2018.
- [10] **Liyuan Liu**, Xiang Ren, Jingbo Shang, Jian Peng, and Jiawei Han. “Efficient Contextualized Representation: Compressing Language Models for Sequence Labeling.” in *Proc. of 2018 Conf. on Empirical Methods in Natural Language Processing (EMNLP’18)*, Brussels, Belgium, Oct. 2018, (Oral, Long).
- [11] **Liu, Liyuan**, Jingbo Shang, Frank Xu, Xiang Ren, Huan Gui, Jian Peng, and Jiawei Han. “Empower Sequence Labeling with Task-Aware Neural Language Model.” in *Proc. of 2018 AAAI Conf. on Artificial Intelligence (AAAI’18)*, New Orleans, LA, Feb. 2018.
- [12] **Liyuan Liu\***, Xiang Ren\*, Qi Zhu, Shi Zhi, Huan Gui, Heng Ji, and Jiawei Han. “Heterogeneous Supervision for Relation Extraction: A Representation Learning Approach.”, in *Proc. of 2017 Conf. on Empirical Methods in Natural Language Processing (EMNLP’17)*, Copenhagen, Denmark, Sept. 2017 (Oral, Long).
- [13] Chao Zhang, **Liyuan Liu**, Dongming Lei, Quan Yuan, Honglei Zhuang, Tim Hanratty, and Jiawei Han, “TrioVecEvent: Embedding-Based Online Local Event Detection in Geo-Tagged Tweet Streams”, in *Proc. of 2017 ACM SIGKDD Int. Conf. on Knowledge Discovery and Data Mining (KDD’17)*, Halifax, Nova Scotia, Canada, Aug. 2017 (Oral, Long).
- [14] **Liyuan Liu**, Linli Xu, Zhen Wang, and Enhong Chen, “Community Detection Based on Structure and Content: A Content Propagation Perspective”, in *Proc. of 2016 Int. Conf. on Data Mining (ICDM’16)*, Atlantic City, NJ, USA, Nov. 2015. (Oral, Long, AC rate: 18.1%)