

# Liyuan Liu

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

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## 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. |                  |
| Yee Fellowship Award  | 2020             |
| 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             |

## 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%)