

Qiang Ning

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Research interest: NLP; Representation Learning; Indirect Supervision; Crowdsourcing; Question Answering; Trustworthy AI

EDUCATION

- **Ph.D., University of Illinois at Urbana-Champaign**
Natural Language Processing
Dissertation: [Understanding time in natural language text](#). Advisor: [Dan Roth](#)
- **M.S., University of Illinois at Urbana-Champaign**
Signal Processing
Dissertation: [Spectral estimation with spatio-spectral constraints for magnetic resonance spectroscopic imaging](#). Advisor: [Zhi-Pei Liang](#)
- **Bachelor, Tsinghua University**
Electronic Engineering (major)
Economics (minor)

EXPERIENCE

- **Amazon, AWS AI** Boston, MA *Sep. 2022 – Now*
Sr. Applied Scientist & Manager
 - **AWS Bedrock:** Managing a team of NLP scientists for building AWS's in-house LLM [Titan](#), responsible for user alignment and model finetuning.
- **Amazon, Alexa AI** Boston, MA *Sep. 2020 – Aug. 2022*
Sr. Applied Scientist
 - **Web-based QA:** Science lead and single-threaded owner on the question understanding initiative to improve Alexa's open-domain QA experience.
- **Allen Institute for AI** Irvine, CA *Sep. 2019 – Sep. 2020*
Research Scientist (AllenNLP)
 - **Event:** Improved machine reading comprehension on events.
 - **Learning:** Developed theoretical and empirical frameworks for indirect supervision.
 - **Tooling:** Developed [CROWDAQ](#) for accessible crowdsourcing.
- **Facebook** Seattle, WA *May 2017 – Aug. 2017*
SDE Intern (Ads Ranking)
 - **RSVP:** My new production model led to revenue/ads score +10% for a new type of ads on Facebook called RSVP; this gain led to overall revenue +0.4% (13% of the annual goal).
 - **Conversion Rate Calibration:** is crucial for quick responses to drifts in user behaviors. My new production model based on gradient-boosted decision trees and sparse neural nets improved the overall revenue by +0.7% (23% of the annual goal).
- **Microsoft Research Asia** Beijing, China *Mar. 2012 – Jun. 2012*
Research Intern (Mobile And Sensing Systems)
 - **Walkie Markie:** I carried out feasibility test for indoor localization and map reconstruction via Wi-Fi fingerprinting.

SELECTED TALKS

1. [ACL Tutorial'2023] W. Yin, M. Chen, B. Zhou, **Q. Ning**, K.-W. Chang and D. Roth.. “Indirectly Supervised Natural Language Processing.” *Annual Meeting of the Association for Computational Linguistics*. [slides]
2. [ACL Tutorial'2021] M. Chen, H. Zhang, **Q. Ning**, M. Li, H. Ji, K. McKeown, and D. Roth. “Event-Centric Natural Language Processing.” *Annual Meeting of the Association for Computational Linguistics*. [slides, video]
3. [EMNLP Paper'2020] **Q. Ning**, H. Wu, R. Han, N. Peng, M. Gardner, and D. Roth. “TORQUE: A Reading Comprehension Dataset of Temporal Ordering Questions.” *Empirical Methods in Natural Language Processing*. [slides, video]
4. [Job Talks'2019] **Q. Ning**. “Understanding Time In Natural Language.” *AI2, Rice University, and Duke University* [slides, video]

SELECTED PUBLICATIONS

See full list on [Google Scholar](#).

1. [NAACL'2022] W. Zhou, **Q. Ning**, H. Elfardy, K. Small, and M. Chen. “Answer Consolidation: Formulation and Benchmarking.” *North American Chapter of the Association for Computational Linguistics*. [Question answering]
2. [NAACL'2022] S. Zhang, **Q. Ning**, L. Huang. “Extracting Temporal Event Relation with Syntactic-Guided Temporal Graph Transformer.” *North American Chapter of the Association for Computational Linguistics*. [Relation extraction]
3. [ACL'2022] **Q. Ning**, B. Zhou, H. Wu, H. Peng, C. Fan, and M. Gardner. “A Meta-framework for Spatiotemporal Quantity Extraction from Text.” *Annual Meeting of the Association for Computational Linguistics*. [Question answering]
4. [EMNLP'2021] R. Han, I-H. Hsu, J. Sun, J. Baylon, **Q. Ning**, D. Roth, and N. Peng. “ESTER: A Machine Reading Comprehension Dataset for Reasoning about Event Semantic Relations.” *Empirical Methods in Natural Language Processing*. [Question answering]
5. [EMNLP'2021] H. He, M. Zhang, **Q. Ning**, and D. Roth. “Foreseeing the Benefits of Incidental Supervision.” *Empirical Methods in Natural Language Processing*. [Indirect supervision]
6. [NAACL'2021] R. Mirzaee, H. R. Faghihi, **Q. Ning**, and R. Kordjamshidi. “SPARTQA: A Textual Question Answering Benchmark for Spatial Reasoning.” *North American Chapter of the Association for Computational Linguistics*. [Spatial reasoning]
7. [NAACL'2021] B. Zhou, K. Richardson, **Q. Ning**, T. Khot, A. Sabharwal, and D. Roth. “Temporal Reasoning on Implicit Events from Distant Supervision.” *North American Chapter of the Association for Computational Linguistics*. [Temporal reasoning]
8. [NAACL'2021] H. Wen, Y. Qu, H. Ji, **Q. Ning**, J. Han, A. Sil, H. Tong, and D. Roth. “Event Time Extraction and Propagation via Graph Attention Networks..” *North American Chapter of the Association for Computational Linguistics*. [Relation extraction]

9. [NeurIPS'2020] K. Wang, **Q. Ning**, and D. Roth. "Learnability with Indirect Supervision Signals." *Neural Information Processing Systems*. [**Indirect supervision**]
10. [EMNLP'2020] **Q. Ning**, H. Wu, R. Han, N. Peng, M. Gardner, and D. Roth. "TORQUE: A Reading Comprehension Dataset of Temporal Ordering Questions." *Empirical Methods in Natural Language Processing*. [**Question answering for "time"**]
11. [EMNLP'2020] **Q. Ning**, H. Wu, P. Dasigi, D. Dua, M. Gardner, R. L. Logan IV, A. Marasovic, and Z. Nie. "Easy, Reproducible and Quality-Controlled Data Collection with CROWDAQ." *Empirical Methods in Natural Language Processing*. [**Accessible crowdsourcing for every one**]
12. [ACL'2020] H. He, **Q. Ning**, and D. Roth. "QuASE: Question-Answer Driven Sentence Encoding." *Annual Meeting of the Association for Computational Linguistics*. [**Indirect supervision**]
13. [ACL'2020] B. Zhou, **Q. Ning**, and D. Roth. "Temporal Common Sense Acquisition with Minimal Supervision." *Annual Meeting of the Association for Computational Linguistics*. [**Commonsense reasoning**]
14. [CoNLL'2019] H. Peng, **Q. Ning**, and D. Roth. "KnowSemLM: A Knowledge Infused Semantic Language Model." *The SIGNLL Conference on Computational Natural Language Learning*. [**Commonsense reasoning**]
15. [EMNLP'2019] R. Han, **Q. Ning**, and N. Peng. "Joint Event and Temporal Relation Extraction with Shared Representations and Structured Prediction." *Empirical Methods in Natural Language Processing*. [**Relation extraction**]
16. [EMNLP'2019] B. Zhou, D. Khashabi, **Q. Ning**, and D. Roth. "'Going on a vacation' takes longer than 'Going for a walk': A Study of Temporal Commonsense Understanding." *Empirical Methods in Natural Language Processing*. [**Commonsense reasoning**]
17. [EMNLP'2019] **Q. Ning**, S. Subramanian, and D. Roth. "An Improved Neural Baseline for Temporal Relation Extraction." *Empirical Methods in Natural Language Processing*. [**Relation extraction**]
18. [ISIT'2019] E. Graves, **Q. Ning**, and P. Basu. "An information theoretic model for summarization, and some basic results." *IEEE International Symposium on Information Theory*. [**Information theory**]
19. [NAACL'2019] **Q. Ning**, H. He, C. Fan, and D. Roth. "Partial Or Complete, That's The Question." *North American Chapter of the Association for Computational Linguistics*. [**Indirect supervision**]
20. [EMNLP'2018] **Q. Ning**, B. Zhou, Z. Feng, H. Peng, and D. Roth. "CogCompTime: A Tool for Understanding Time in Natural Language." *Empirical Methods in Natural Language Processing*. [**Relation extraction**]
21. [ACL'2018] **Q. Ning**, H. Wu, and D. Roth. "A Multi-Axis Annotation Scheme for Event Temporal Relations." *Annual Meeting of the Association for Computational Linguistics*. [**Relation extraction**]

22. [ACL'2018] Q. Ning, Z. Feng, H. Wu, and D. Roth. "Joint Reasoning for Temporal and Causal Relations." *Annual Meeting of the Association for Computational Linguistics*. [Relation extraction]
23. [*SEM'2018] Q. Ning, Z. Yu, C. Fan, and D. Roth. "Exploiting Partially Annotated Data in Temporal Relation Extraction." *Joint Conference on Lexical and Computational Semantics*. [Relation extraction]
24. [NAACL'2018] Q. Ning, H. Wu, H. Peng, and D. Roth. "Improving Temporal Relation Extraction with a Globally Acquired Statistical Resource." *North American Chapter of the Association for Computational Linguistics*. [Commonsense reasoning]
25. [EMNLP'2017] Q. Ning, Z. Feng, and D. Roth. "A Structured Learning Approach to Temporal Relation Extraction." *Empirical Methods in Natural Language Processing*. [Relation extraction]
26. [TBME'2016] Q. Ning, C. Ma, F. Lam, and Z.-P. Liang. "Spectral Quantification for High-Resolution MR Spectroscopic Imaging with Spatospectral Constraints." *IEEE Transactions on Biomedical Engineering*. [Brain imaging]
27. [MRM'2016] C. Ma, F. Lam, Q. Ning, C. Johnson, and Z.-P. Liang. "High-resolution ¹H-MRSI of the brain using short-TE SPICE." *Magnetic Resonance in Medicine*. [Brain imaging]
28. [ISBI'2015] Q. Ning, C. Ma, and Z.-P. Liang. "Spectral Estimation for Magnetic Resonance Spectroscopic Imaging with Spatial Sparsity Constraints." *IEEE International Symposium on Biomedical Imaging*. [Brain imaging] [Best paper finalist]
29. [SPL'2013] Q. Ning, K. Chen, L. Yi, C. Fan, Y. Lu, and J. Wen. "Image Super-Resolution via Analysis Sparse Prior." *IEEE Signal Processing Letters*. [Computer vision]

AWARDS

- **List of Teachers Ranked as Excellent by Their Students:** for ECE120, UIUC, 2017
- **The YEE Fellowship:** College of Engineering, UIUC, 2015-2016
- **Finalist for the Best Paper Award:** IEEE ISBI, 2015
- **Academic Excellence Scholarship:** Tsinghua University, 2010-2012
- **Excellence in Science and Technology Scholarship:** Tsinghua University, 2012
- **National Scholarship:** Tsinghua University, 2011

SERVICE

- **Chair**
 - ICLR'24: Area Chair
 - NeurIPS'23: Area Chair
 - AAAI'23, AAAI'24: Senior Program Committee
 - ACL'21, ACL'23: Information Extraction (Area Chair)
 - NAACL'22: Demonstration Track Chair
 - EMNLP'21, EMNLP'23: Information Extraction (Area Chair)
 - NAACL'21: Information Extraction (Area Chair)
- **Conference reviewer:** *ACL, EMNLP, AAAI, COLING, LREC, ECIR, NLPCC
- **Journal reviewer:** JAIR, JNLE, Neurocomputing