

# CHEN ZHAO

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## RESEARCH INTEREST

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My main research interest is in natural language processing. The goal of my research is to equip existing intelligent agents with reasoning capacities and deploy them into real-world. Mainly grounded on the question answering problem, I focus on two directions: (1) How to build reasoning agents (e.g., QA systems) from different world-knowledge as evidence, including unstructured text (open-domain question answering) and structured tables (semantic parsing); (2) How to deploy reasoning agents in the real-world, which involves studies related to calibration, interpretability, and human computer interaction.

## EDUCATION

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- University of Maryland, College Park, MD, USA** *08/2016-01/2022*
- Ph.D in Computer Science (Co-Advisors: Jordan Boyd-Graber, Hal Daumé III)
  - Thesis: Towards Practical Complex Question Answering
- Zhejiang University, Hangzhou, Zhejiang, P.R.China** *09/2011-07/2015*
- B.E. in Computer Science

## WORK EXPERIENCE

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- ML2 Lab, New York University** *02/2022-Present*
- Postdoctoral Researcher (Co-Supervisors: He He, Kyunghyun Cho)
- Microsoft Semantic Machines** *05/2021-08/2021*
- Research Intern (Mentor: Anthony Platanios)
  - Cross-Database generalization on new domains for semantic parsing over tables (Text-to-SQL). Published at ACL 2022.
- IDEAS Group, Microsoft Research Redmond, Bing Relevance Group** *05/2019-08/2019*
- Research Intern (MentorS: Chenyan Xiong and Corby Rosset)
  - Multi-hop question answering. Published at ICLR 2020.
- DMX Group, Microsoft Research Redmond** *05/2018-08/2018*
- Research Intern (Mentor: Yeye He)
  - Entity typing and matching. Published at WWW 2019.
- Institute of Automation, Chinese Academy of Sciences** *09/2015-04/2016*
- Research Assistant (Advisor: Bo Xu)
  - Sequence to sequence models for conversational agents.
- State Key Lab of CAD&CG, Zhejiang University** *07/2014-07/2015*
- Research Assistant (Advisor: Deng Cai)
  - Scalable atom decomposition algorithm for matrix completion.

## PUBLICATIONS

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(\* indicates equal contribution)

Yanda Chen, **Chen Zhao**, Zhou Yu, Kathleen McKeown and He He. On the Relation between Sensitivity and Accuracy in In-context Learning. *arXiv:2209.07661 Preprint*, 2022

Chenglei Si, **Chen Zhao**, Sewon Min and Jordan Boyd-Graber. Revisiting Calibration for Question Answering. Findings of Empirical Methods in Natural Language Processing (EMNLP Findings), 2022

**Chen Zhao**, Yu Su, Adam Pauls and Emmanouil Antonios Platanios. Bridging the Generalization Gap in Text-to-SQL Parsing with Schema Expansion. Annual Meeting of the Association for Computational Linguistics (ACL), 2022

**Chen Zhao**, Chenyan Xiong, Jordan Boyd-Graber and Hal Daumé III. Distantly-Supervised Evidence Retrieval Enables Question Answering without Annotated Evidence Pieces. Empirical Methods in Natural Language Processing (EMNLP), 2021

Chenglei Si, **Chen Zhao**, and Jordan Boyd-Graber. What is in a Name? Answer Equivalence For Open-Domain Question Answering. Empirical Methods in Natural Language Processing (EMNLP), 2021

**Chen Zhao**, Chenyan Xiong, Jordan Boyd-Graber and Hal Daumé III. Multi-Step Reasoning Over Unstructured Text with Beam Dense Retrieval. Conference of the North American Chapter of the Association for Computational Linguistics (NAACL), 2021

Tianze Shi\*, **Chen Zhao\***, Jordan Boyd-Graber, Hal Daumé III and Lillian Lee. On the Potential of Lexico-logical Alignments for Semantic Paring to SQL Queries. Findings of Empirical Methods in Natural Language Processing (EMNLP Findings), 2020

**Chen Zhao**, Chenyan Xiong, Corby Rosset, Xia Song, Paul Bennett and Saurabh Tiwary. Transformer-XH: Multi-evidence Reasoning with Extra Hop Attention. International Conference on Learning Representations (ICLR), 2020

**Chen Zhao**, Chenyan Xiong, Xin Qian and Jordan Boyd-Graber. Complex Factoid Question Answering with a Free-Text Knowledge Graph. The Web Conference (WWW), 2020

**Chen Zhao** and Yeye He. Auto-EM: End-to-end Fuzzy Entity-Matching using Pre-trained Deep Models and Transfer Learning. The Web Conference (WWW), 2019

Ahmed Elgohary\*, **Chen Zhao\*** and Jordan Boyd-Graber. A dataset and baselines for sequential open-domain question answering. Empirical Methods in Natural Language Processing (EMNLP), 2018.

Chengxi Ye, **Chen Zhao**, Yezhou Yang, Cornelia Fermuller, and Yiannis Aloimonos. LightNet: A Versatile, Standalone Matlab-based Environment for Deep Learning. In Proceedings of the 2016 ACM on Multimedia Conference (MM '16).

Yao Hu, **Chen Zhao**, Deng Cai, Xiaofei He, and Xuelong Li. Atom Decomposition with Adaptive Basis Selection Strategy for Matrix Completion. ACM Trans. Multimedia Comput. Commun.

## INVITED TALKS

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University of North Texas, NLP seminar, 2022

New York University, NLP seminar 2021

University of Maryland, College Park, CLIP Colloquium 2021

Royal Melbourne Institute of Technology, IR seminar, 2021

University of Glasgow, IR seminar 2021

Microsoft Semantic Machines, 2021

Microsoft Research, 2020

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## TEACHING EXPERIENCE

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### Teaching Assistant at Department of Computer Science, University of Maryland

Statistical Pattern Recognition (CMSC828C), Fall 2020  
Algorithms (CMSC 351), Spring 2019  
Computational Linguistics I (CMSC 723), Fall 2018  
Algorithms (CMSC 351), Spring 2018  
Cryptography (CMSC 456), Fall 2017  
Object-Oriented Programming II (CMSC 132), Spring 2017  
Object-Oriented Programming I (CMSC 131), Fall 2016

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## PROFESSIONAL SERVICE

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**Program Committees/Reviewing:** ARR 2021-2022, NeurIPS 2022, COLING 2022, EMNLP 2022, EMNLP 2021, ACL 2021, NAACL 2021. CIKM 2020

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## MENTORING

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Chenglei Si (UMD Undergrad, 2020-Present, Question Answering, Calibration)  
Guande Wu (NYU PhD, 2022-Present, Human-in-the-loop NLP)  
Danielle Rothermel (NYU PhD, 2022-Present, Question Answering)  
Yanda Chen (Columbia U PhD, 2022-Present, In-context Learning in NLP)  
Vaibhav Mavi (NYU MS, 2022-Present, Question Answering)  
Yilun Zhao (Yale U, MS, 2022-Present, Semantic Parsing)

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## AWARDS

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Dean's Fellowship, University of Maryland, College Park	2016
Grant for excellent Graduation Thesis, Zhejiang University	2015
Grant for Student Research Training Program (SRTP), Zhejiang University	2014
Grant for National University Student Innovation Program, Zhejiang University	2014

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## MISCELLANEOUS

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Languages: Mandarin Chinese (native), English (fluent)  
Skills: Experience with various machine learning frameworks / toolkits / languages, including PyTorch, Tensorflow, DyNet, etc.