Xiaoxuan Wang

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Education:

University of Illinois Urbana-Champaign   *Auguest,2018--May, 2022*
B.S. of Computer Science in Grainger Engineering College
          Minor in Mathematics   James Scholar Honor   Dean List

University of California Los Angeles   *Sept, 2022--Present*
Ph.D. of Computer Science
          Advisor: Wei Wang
          Focus: Natural Language Process, Large Language Model, AI for Science

Manuscripts:

- ***SciBench: Evaluating College-Level Scientific Problem-Solving Abilities of Large Language Model***
  <u>Xiaoxuan Wang</u>*, Ziniu Hu*, Pan Lu*, Yanqiao Zhu*, Jieyu Zhang,
  Satyen Subramaniam, Arjun R. Loomba, Shichang Zhang, Yizhou Sun, Wei Wang
  Submitted to ICLR 2024

- ***STAR: Boosting Low-Resource Event Extraction by Structure-to-Text
  Data Generation with Large Language Models***
  Mingyu Derek Ma, <u>Xiaoxuan Wang</u>, Po-Nien Kung, P.Jefferey Brantingham, Nanyun Peng, Wei Wang
  AAAI 2024

- ***Learning under Label Proportions for Text Classification***
  Jatin Chauhan, <u>Xiaoxuan Wang</u>, Wei Wang
  EMNLP -Findings 2023

- ***Beyond Traditional Text Classification:
  Generalized Zero-Shot Learning Approach for Long Documents***
  <u>Xiaoxuan Wang</u>, Jatin Chauhan, Wei Wang
  Submitted to NAACL 2024

- ***Global Responses to the COVID-19 Pandemic: A Case Study of Spatiotemporal Evidence Finding and
  Verification***
  Rotem Dror, <u>Xiaoxuan Wang</u>, Dan Roth

- **Seamless Equal Accuracy Ratio for Inclusive CTC Speech Recognition**
  Heting Gao, <u>Xiaoxuan Wang</u>, Sunghun Kang, Rusty Mina, Dias Issa, John Harvill, Leda Sarı, Mark
  Hasegawa-Johnson, Chang D. Yoo
  Speech Communication 2022

Research Experience:

SciBench: Scientific Computing Problems Benchmark   March 2023— July 2023
<u>Advised by Professor **Wei Wang** and Professor **Yizhou Sun**, University of California Los Angeles</u>
- Create a college-level dataset comprised of challenging scientific problems in chemistry, physics, and mathematics, offering a higher degree of difficulty compared to currently available datasets.
- Evaluate the performance and constraints of Large Language Models using the created datasets and design a self-assessment and error detection mechanism.
- Design an evaluation protocol that systemically and automatically examines the problem-solving abilities of Large Language Model.

Low-Resource Event Extraction Using LLM   February 2023— June 2023
<u>Advised by Professor **Wei Wang**, University of California Los Angeles</u>
- Devise the STAR method, a structure-to-text data generation technique, utilizing Large Language Models for low-resource event extraction tasks.

- Implement fine-grained step-by-step instructions, with a self-reflection and self-refinement mechanism for error identification and quality enhancement.
- Validate through experiments that STAR outperforms human-curated data point in specific scenarios, significantly boosting low-resource event extraction performance.

Learning under Label Proportions for Text Classification   October 2022— February 2023
Advised by Professor **Wei Wang**, University of California Los Angeles
- Create a college-level dataset comprised of challenging scientific problems in chemistry, physics, and mathematics, offering a higher degree of difficulty compared to currently available datasets.
- Evaluate the performance and constraints of Large Language Models using the created datasets and design a self-assessment and error detection mechanism.
- Design an evaluation protocol that systemically and automatically examines the problem-solving abilities of Large Language Model.

Generalized Zero-Shot Learning for Long Document   October 2022— February 2023
Advised by Professor **Wei Wang**, University of California Los Angeles
- Design a novel loss formulation that address the shortcomings of previous work DLLP.
- Showcase strong empirical results that outperform baselines in most of configurations.

Global Government Response to Covid-19 Entailment   May 2021—May 2022
Advised by Professor **Dan Roth**, University of Pennsylvania
- Develop temporal tagger to extract temporal expressions from document and normalize them to the consistent annotation format
- Use state-of-art ranking systems to match government policy and news article with spatial and temporal inference
- Apply different state-of-art entailment methods to the top-ranking articles.

Fairness Speech Recognition   August 2020—December 2021
Advised by Professor **Mark Hasegawa-Johnson**, University of Illinois Urbana Champaign
- Cooperate with Korea Advanced Institute of Science and Technology
- Help develop a novel inclusiveness measure for ASR System integrated with the standard CTC training pipeline to lower accuracy gap between protected attributes
- Help create novel multi-dialect dataset of ASR by combining existing corpora in seven dialects