

Yuxin (Audrey) Wang

Personal Website: <https://audreyw.top/AboutMe>

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EDUCATION

- **Dartmouth College** Hanover, New Hampshire, U.S.
Ph.D. in Computer Science
Sep. 2023 - June 2028 (expected)
- Advisor: Prof. Soroush Vosoughi & Prof. Saeed Hassanpour
- Research Focus: *AI for Social Good, AI Alignment, Natural Language Processing.*
- **Nanjing University** Nanjing, Jiangsu, China
Master in Computer Science
Sep. 2019 - June 2023
- Advisor: Prof. Wei Hu
- Courses: *Natural Language Processing, Knowledge Graph, Knowledge Representation and Reasoning, Knowledge Engineering with Semantic Web Technologies, Advanced Machine Learning, Agent Technology.*
- **Nanjing University** Nanjing, Jiangsu, China
Bachelor of Computer Science
Sep. 2015 - June 2019
- Courses: *Artificial Intelligence, Introduction to Data Mining, Big Data Processing, Introduction and Application of Database, Algorithm Design and Analysis, Advanced Programming, Probability and Mathematical Statistics, Linear Algebra.*

RESEARCH INTERESTS

Natural Language Processing; AI for Social Good; Knowledge Representation and Reasoning

PUBLICATIONS

1. **A Survey on Game Playing Agents and Large Models: Methods, Applications, and Challenges** (*arXiv 2024*)
Xinrun Xu, Yuxin Wang, Chaoyi Xu, Ziluo Ding, Jiechuan Jiang, Zhiming Ding, Börje F. Karlsson
- We explored the swift evolution of Large-scale Models (LMs) in complex game-playing scenarios, systematically reviewing the architectures of LM-based Agents (LMAs), their commonalities, and challenges. Our work serves as a resource for researchers to gain a clear understanding of the field and stimulates interest in this impactful area.
2. **Open-world Story Generation with Structured Knowledge Enhancement: A Comprehensive Survey** (*Neurocomputing 2023*)
Yuxin Wang, Jieru Lin, Zhiwei Yu, Börje F. Karlsson, Wei Hu
- We provide a comprehensive review of structured knowledge-enhanced story generation. We categorize existing knowledge integration techniques, detail essential datasets and metrics, and highlight persistent challenges and prospective research avenues in this domain.
3. **Lifelong Embedding Learning and Transfer for Growing Knowledge Graphs** (*AAAI 2023*)
Yuanning Cui, Yuxin Wang, Zequn Sun, Wenqiang Liu, Yiqiao Jiang, Kexin Han, Wei Hu
- We study lifelong knowledge embedding and consider knowledge transfer and retention of growing snapshots of knowledge graphs. A masked KG autoencoder is proposed with SOTA performance on link prediction task.
4. **Facing Changes: Continual Entity Alignment for Growing Knowledge Graphs** (*ISWC 2022*)
Yuxin Wang, Yuanning Cui, Wenqiang Liu, Zequn Sun, Yiqiao Jiang, Kexin Han, Wei Hu
- We dive into a realistic entity alignment setting where new data continually emerge. We design a novel continual entity alignment method that overcomes static alignment methods' drawbacks while reaching effective and efficient performance.
5. **Inductive Knowledge Graph Reasoning for Multi-batch Emerging Entities** (*CIKM 2022*)
Yuanning Cui, Yuxin Wang, Zequn Sun, Wenqiang Liu, Yiqiao Jiang, Kexin Han, Wei Hu
- We propose a walk-based inductive knowledge graph reasoner to tackle a novel and realistic setting where unseen entities emerge in steaming batches. With the adaptive attention mechanism, our model outperforms competitive baselines.

6. Revisiting Embedding-based Entity Alignment: A Robust and Adaptive Method (TKDE 2022)

Zequn Sun, Wei Hu, Chengming Wang, Yuxin Wang, Yuzhong Qu

- We revisit existing entity alignment methods and expose their defections in different scenarios. As an advance, we develop a robust and adaptive model which reaches all-sided excellence and superiority under different settings.

INTERNSHIP EXPERIENCE

• Research Intern in Microsoft Research Asia

Beijing, China, July 2022 - Jan. 2023

- Mentor: Börje F. Karlsson
- Research Group: Knowledge Computing
- Research Project: Structured knowledge-enhanced open-domain story generation.

RESEARCH PROJECTS (UNUPDATED)

• Enhancing open-world story generation with structured knowledge

July 2022 - Jan. 2023

- Work done in Microsoft Research Asia.
- We build local knowledge graphs for input story plots and guide the PLM GPT-3 to generate stories reflecting the given plots. Structured knowledge enriches content planning, which helps to produce more coherent and informative stories.

• Entity fusion on cross-lingual game knowledge graphs

Dec. 2021 - Nov. 2022

- Cooperated and founded by Interactive Entertainment Group (IEG), Tencent.
- I build two game knowledge graphs using app items scraped from App Store and Google Play. I use BERT to encode knowledge graphs and design a simple and effective method to match cross-lingual game entities.

• Representation learning on large-scale knowledge graphs

Nov. 2019 - Oct. 2021

- Founded by the State Key Laboratory of Mathematical Engineering and Advanced Computing, China.
- As a part of the project, my responsibility is studying entity alignment in large-scale knowledge graphs. I participate in a submission in CIKM2021 on the entity alignment task.

• Incremental knowledge graph representation learning

June 2019 - Dec. 2019

- Founded by the Rhino-Bird Cooperation Program of Tencent
- As the project leader, I am responsible for exploring an efficient incremental knowledge graph embedding method. I design an incremental learning model using GNN. A paper about the work was submitted to AAAI2019.

More project experience and detailed description can be found on my [personal website!](#)

PEER REVIEW SERVICE

- Conferences: ICML 2024
- Journals: TMLR, GJCST

TEACHING EXPERIENCE

• Introduction to Programming and Computation

Teaching Assistant Spring 2024

- An undergraduate-level core course to teach students to design, write, and analyze code to solve computational problems from a range of disciplines. I was responsible for holding Q&A sessions, grading exams/assignments and developing reference answers.

• Introduction to Database System

Teaching Assistant Fall 2020

- An undergraduate-level core course introducing the concepts and theory of relational database system. I was responsible for grading exams/assignments and creating teaching materials.

TECHNICAL AND LANGUAGE SKILLS

- Practiced in Python, SQL, and C++ with years of project-level programming experience.
- Practiced in PyTorch and TensorFlow deep learning frameworks.
- Rich knowledge background in Deep Learning, Continual Learning, Knowledge Graphs, and NLP.
- Proficient English (TOEFL 106') and native Mandarin speaker

AWARDS AND OUTREACHES

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|---|-------------------------|
| • First Prize Graduate Academic Scholarship at Nanjing University | <i>2019, 2020, 2021</i> |
| • The People's Scholarship in China | <i>2016, 2017, 2018</i> |
| • Second Prize in FPGA Design Competition at Nanjing University | <i>2016</i> |
| • Council member of the University English Club | <i>2016, 2017</i> |
| • Council member of the Computer Science Student Union | <i>2015, 2016</i> |

PERSONALITY AND INTERESTS

- Enjoy teamwork and interdisciplinary cooperation. Work hard, play harder.
- Tech blog writer on Medium ([@audreywongkg](#)) and my [personal blog](#). Always love to share.
- Love sports (hiking, cycling, jogging, swimming, and badminton).
- Love music and movies. I play the guitar and ukulele!