

Tianyue Ou

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Education

Carnegie Mellon University, LTI, SCS

Master of Science

Pittsburgh, Pennsylvania, US

2023 – 2025

- A+ coursework: LLM Systems, Multilingual NLP

Johns Hopkins University

Bachelor of Science in Computer Science

Baltimore, Maryland, US

2017 – 2021

- Dean's List
- Relevant coursework: Deep Learning, Machine Learning, Natural Language Processing

Research Interest

LLM-Based Agent, Synthetic Data, Agent/LLM Reasoning, Multi-Agent Planning

Publications

* indicates equal contribution. † indicates equal supervision.

1. “**Synatra: Turning Indirect Knowledge into Direct Demonstrations for Digital Agents at Scale**”
Tianyue Ou, Frank F. Xu, Aman Madaan, Jiarui Liu, Robert Lo, Abishek Sridhar, Sudipta Sengupta, Dan Roth, Graham Neubig, Shuyan Zhou.
NeurIPS 2024. [Arxiv] [Website]
2. “**Harnessing Webpage UIs for Text-Rich Visual Understanding**”
Junpeng Liu, **Tianyue Ou**^{*}, Yifan Song^{*}, Yuxiao Qu^{*}, Wai Lam, Chenyan Xiong, Wenhui Chen, Graham Neubig, Xiang Yue.
ICLR 2025. [Arxiv] [Website]
3. “**VisualPuzzles: Decoupling Multimodal Reasoning Evaluation from Domain Knowledge**”
Tianyue Ou^{*}, Yueqi Song^{*}, Yibo Kong, Zecheng Li, Graham Neubig[†], Xiang Yue[†].
Preprint 2025. [Arxiv] [Website]
4. “**CowPilot: A Framework for Autonomous and Human-Agent Collaborative Web Navigation**”
Faria Huq, Zora Zhiruo Wang, Frank F. Xu, **Tianyue Ou**, Shuyan Zhou, Jeffrey P. Bigham[†], Graham Neubig[†].
NAACL Demo 2025. [Arxiv] [Website]
5. “**WebArena: A Realistic Web Environment for Building Autonomous Agents**”
Shuyan Zhou, Frank F. Xu, Hao Zhu, Xuhui Zhou, Robert Lo, Abishek Sridhar, Xianyi Cheng, **Tianyue Ou**, Yonatan Bisk, Daniel Fried, Uri Alon, Graham Neubig.
ICLR 2024. [Arxiv] [Website]

6. “**An In-depth Look at Gemini’s Language Abilities**”
Syeda Nahida Akter*, Zichun Yu*, Aashiq Muhamed*, **Tianyue Ou***, Alex Bäuerle, Ángel Alexander Cabrera, Krish Dholakia, Chenyan Xiong, Graham Neubig.
Preprint 2023. [Arxiv] [Website]
7. “**Toward Global AI Inclusivity: A Large-Scale Multilingual Terminology Dataset**”
Jiarui Liu, Iman Ouzzani, Wenkai Li, Lechen Zhang, **Tianyue Ou**, Houda Bouamor, Zhijing Jin, Mona T. Diab.
ACL Findings 2025. [Arxiv]

Experience

Research Assistant

2023 – Present

NeuLab, Carnegie Mellon University

Pittsburgh, PA

- Advised by Prof. Graham Neubig, Shuyan Zhou, and Xiang Yue
- Developing agents using synthetic data and indirect supervision.
- Building multimodal reasoning benchmarks.

Research Assistant

2024 – Present

Daniel Fried Lab, Carnegie Mellon University

Pittsburgh, PA

- Focused on multi-agent reasoning and complex planning.

Machine Learning Engineer

2022 – 2023

Meta

Menlo Park, CA

- Improved music recommendations for stories/reels using embeddings and pagerank.

Professional Service

Conference Reviewer: NeurIPS 2025

Teaching

Teaching Assistant for 601.315/415/615 – Databases

Baltimore, MD

Johns Hopkins University

2020 – 2020

- Held office hours.
- Guided final project small groups.
- Assisted in grading and maintaining the course’s project-based evaluation system.

Skills

Languages: Python, Java, C/C++, OCaml

Libraries/Frameworks: PyTorch, Llamafactory, Verl, Deepspeed, Autogen, TGI, vLLM

Backend Tools: Dataswarm, Hive, Spark, SQL