

# Yi Wu

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## RESEARCH INTERESTS

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My research aims to fuse artificial and human intelligence, and find methods for each to boost each other:

- Foundation Model based agents,
- NLP for social good, and Interpretability and Explanation.

## EDUCATION

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- **The University of Chicago** Chicago, IL  
*Pre-Doctoral M.S. in Computer Science* 2024.9-2025.12 (expected)  
Supervisor: Chenhao Tan
- **University of Wisconsin-Madison** Madison, WI  
*B.S. in Computer Sciences* 2022.9-2024.8  
GPA: 4.0/4.0
- **University of Illinois Urbana-Champaign** Champaign, IL  
*The Grainer College of Engineering, Exchange Program* 2022.1-2022.5  
GPA: 3.91/4.0
- **The Hong Kong University of Science and Technology** Hong Kong SAR  
*B.S. in Computer Science, Mathematics* 2019.9-2022.8  
GPA: 3.716/4.3

### Related Courses:

Honors Design and Analysis of Algorithms, Honors Probability, Honors Linear Algebra, Calculus I, II, III, Intro to Machine Perception, Communication Networks, Intro to Optimization, Intro-Artificial Intelligence, Deep Learning in Computer Vision, Advanced Natural Language Processing

## PUBLICATIONS & PREPRINTS

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- [1] **Evolving Domain Adaptation of Pretrained Language Models for Text Classification**  
Yun-Shiuan Chuang, **Yi Wu**, Dhruv Gupta, Rheeeya Uppaal, Ananya Kumar, Luhang Sun, Makesh M. Sreedhar, Sijia Yang, Timothy T. Rogers, Junjie Hu  
Preprint. [pdf]
- [2] **Evolving Domain Adaptation of Pretrained Language Models for Text Classification**  
Yun-Shiuan Chuang, **Yi Wu**, Rheeeya Uppaal, Luhang Sun, Makesh M. Sreedhar, Sijia Yang, Timothy T. Rogers, Junjie Hu  
In *NeurIPS 2023 Workshop on Distribution Shifts (DistShift)*. [pdf]
- [3] **KnowComp Submission for WMT23 Word-Level AutoCompletion Task**  
**Yi Wu**, Haochen Shi, Weiqi Wang, Yangqiu Song  
In *Proceedings of the Eighth Conference on Machine Translation (WMT-2023), EMNLP*. [pdf], [code]

## RESEARCH EXPERIENCES

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**Hulab & Knowledge and Concepts Lab, UW-Madison** 2023.3 - present  
Advisor: Junjie Hu, Timothy T. Rogers

- **Simulating Opinion Dynamics with Networks of LLM-based Agents**
  - Helped to explore the use of Large Language Models (LLMs) for simulating human opinion in group dynamics in politically charged environments.
  - Proposed ideas to identify biases in LLM agents towards accurate information, impacting the simulation of resistant viewpoints, like in climate change debates.
  - Helped to utilize LLMs to role-play partisan personas, finding that responses without Chain-of-Thought (CoT) reasoning align more with human behaviors.
- **Evolving Domain Adaptation of Pretrained Language Models for Text Classification**

- Investigated Evolving Domain Adaptation (EDA) strategies for Pretrained Language Models (PLM) in time-series text classification, especially incremental self-training.
- Conducted extensive experiments to demonstrate incremental self-training's superiority in adapting PLMs to evolving domain shifts.
- Suggested the necessity of regular PLM updates for sustained real-world application accuracy and suggested future research on PLM robustness to natural language evolution.

## **KnowComp, HKUST**

2023.3 - 2023.8

Advisor: Yangqiu Song

- **WMT23 Word-Level AutoCompletion Task**

- Proposed a LLM-based system for the WMT23 Word-Level Auto-Completion (WLAC) task, using LLMs to evaluate performance in multilingual contexts.
- Tested the system in Chinese-English, German-English, and English-German translation directions.
- Assessed performance under zero-shot and few-shot settings, finding improved accuracy with additional training exemplars.

## **PROJECTS & EXPERIENCES**

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- **A TCP Protocol Implementation based on UDP:** Used UDP protocol to construct a TCP protocol that can tolerate packet drops, allow other concurrent connections a fair chance. The protocol was tested to be reliable within the virtual machine environment.
- **Iterative Closest Point and Odometry:** Constructed a point cloud alignment and depth odometry algorithm to estimate camera poses and build 3D maps of the environment through raw depth observation.
- **3D Multi Object Tracking:** Implemented a Kalman Filter to match the objects detected by the object detector in the current frame to the objects are already tracking from the previous frames.

## **HONORS & AWARDS**

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- **Dean's List**, 2019, HKUST
- **University's Scholarships Scheme for Continuing Undergraduates**, 2020-2021, 2021-2022, HKUST
- **Dean's List**, 2022 Spring, UIUC
- **Dean's List**, 2022 Fall, 2023 Spring, UW-Madison

## **SKILLS**

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- **Programming skills:** Python, C/C++, SQL, Java
- **Frameworks & Tools:** PyTorch, Huggingface, Git, GDB, PDB,  $\LaTeX$
- **Languages:** Chinese(Native), English(Professional)