Yanming Wan

sz.wanym@gmail.com | https://www.wanyanming.com | +86 188 0013 1838

Profile

- **PhD student interested in Social Learning and Human-AI Interaction.**
- Currently studying in **University of Wahington CSE**, advised by **Prof. Natasha Jaques**.

Education

University of Washington **Seattle, WA, USA**

PhD Student, Paul G. Allen School of Computer Science & Engineering, Advised by Natasha Jaques *Sept. 2023 – present*

- GPA: 3.93/4.00 (Up till Spring Semester, 2024)

Tsinghua University **Beijing, China**

Undergraduate Student, Yao Class, Institute for Interdisciplinary Information Sciences (IIIS) *Aug. 2019 – June 2023*

- **GPA: 3.97/4.00, Rank: 2/30**
- Received **Recognition Prize of Yao Award** *Sept. 2022*
- Received **Jiang-Nanxiang Scholarship** (Unique in Yao Class) *Dec. 2021*
- Won the **Gold Medal** in 2018 Chinese Mathematical Olympiad, and admission guaranteed *Nov. 2018*

Research Experiences

Social RL Group, University of Washington **Seattle, WA, USA**

Research Assistant and Teacher Assistant, Advised by Natasha Jaques *Sept. 2023 – present*

- Variantional Preference Learning: To address the need for pluralistic alignment, we propose to infer a novel user-specific latent and learning reward models and policies conditioned on it without additional user-specific data. (In submission)
- Goal Recognition for Instruction Disambiguation: To better natural language instruction in collaborative embodied tasks, we propose to make explicit inferences of human's goals and intentions as intermediate reasoning steps. (In submission)

CoCoSci Lab, Massachusetts Institute of Technology **Cambridge, MA, USA**

Undergraduate Visiting Student, Advised by Josh B. Tenenbaum and Jiayuan Mao *Feb. 2022 – July 2022*

- To collaborate with human partners successfully in complex environments, robots should be able to interpret and follow natural language instructions in contexts.
- Introduced HandMeThat, a benchmark for a holistic evaluation of instruction understanding and following in physical and social environments, which highlights the additional challenge of understanding instructions with ambiguities based on physical states and human actions and goals.
- Evaluated several baseline models to show that both online and offline reinforcement learning algorithms perform poorly on the benchmark, suggesting significant room for future work on physical and social human-robot communications.
- Worked on proposing ideas, modeling, coding, conducting experiments, writing the paper, and presenting slides; co-first author of **NeurIPS 2022** Datasets and Benchmarks Track accepted paper. (http://handmethat.csail.mit.edu)

Ma's Lab, Institute for Interdisciplinary Information Sciences (IIIS) **Beijing, China**

Undergraduate Researcher in Low-Level Vision, Advised by Kaisheng Ma *Dec. 2020 – Oct. 2021*

- Traditional data augmentation methods are proven to lose their effectiveness in low-level vision tasks (e.g. denoising) in our experiments, calling for a highly-versatile, theoretically-based data augmentation scheme.
- Developed a data augmentation method, which can guide the model to learn the required frequency domain component information during the training process, and demonstrated its effectiveness through experiments.
- Worked on proposing ideas and conducting experiments, collaborated with a PhD student.

Publications

Yanming Wan*, Jiayuan Mao*, Joshua B. Tenenbaum. HandMeThat: Human-Robot Communication in Physical and Social Environments. In *NeurIPS Datasets and Benchmarks Track*, 2022.

Skills

Languages: Mandarin (Native), English (TOEFL 106/120)
Programming: Python (Pytorch, NumPy, Scikit-learn), C/C++, MATLAB, PDDL, Verilog HDL
Interests: Piano (10 years), Chorus (5 years), Music Composition