Xinyi (Linda) Wang

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About Me

I am a final-year Ph.D. candidate in the Computer Science department at the University of California, Santa Barbara (UCSB). My research focuses on developing a principled understanding of deep learning models, especially large language models, from a Bayesian or causal perspective, with the goal of improving their capabilities, addressing their limitations, and optimizing their application across diverse domains.

Education

- **University of California, Santa Barbara (UCSB)** — Santa Barbara, CA, US
  Ph.D. in Computer Science (expected) — *9.2020 - present*
  - GPA: 4.0/4.0
  - Advisor: William Yang Wang
- **The Hong Kong University of Science and Technology (HKUST)** — Hong Kong, China
  B.Sc in Applied Mathematics and Computer Science — *9.2016 - 7.2020*
  - GPA: 3.7/4.3
- **University of California, Los Angeles (UCLA)** — Los Angeles, CA, US
  Term exchange in Mathematics (Non-degree) — *9.2019 - 12.2019*
  - GPA: 3.9/4.0 (Dean's Honors List)

Honors and Awards

- J.P. Morgan AI PhD Fellowship — J.P. Morgan AI, 2024
- Computer Science Outstanding Publication Award — UCSB, 2024
- Second place in the Alexa Prize Simbot Challenge — Amazon, 2023
- Academic Excellence Fellowship — UCSB, 2020-2024
- Joseph Needham Merit Scholarship — Hong Kong, 2020-2024
- The 15th Epsilon Fund Award — HKUST, 2020
- Chern Class Scholarship — HKUST, 2017-2020
- HKSAR Government Scholarship Fund - Reaching Out Award — Hong Kong, 2019-2020
- University's Scholarship Scheme for Continuing Undergraduate Students — HKUST, 2017-2020

Publications[1]

* denotes equal contribution.

- Xunjian Yin, **Xinyi Wang**, Liangming Pan, Xiaojun Wan, William Yang Wang. *Gödel Agent: A Self-Referential Agent Framework for Recursive Self-Improvement.* Arxiv 2024. [paper]
- Sitao Cheng, Liangming Pan, Xunjian Yin, **Xinyi Wang**, William Yang Wang. *Understanding the Interplay between Parametric and Contextual Knowledge for Large Language Models.* Arxiv 2024. [paper]

[1] Google Scholar: https://scholar.google.com/citations?user=3vvbplcAAAAJ

- **Xinyi Wang***, Antonis Antoniades*, Yanai Elazar, Alfonso Amayuelas, Alon Albalak, Kexun Zhang, William Yang Wang. *Generalization v.s. Memorization: Tracing Language Models' Capabilities Back to Pretraining Data.* Arxiv 2024. [paper]
- Jiachen Li, Weixi Feng, Tsu-Jui Fu, **Xinyi Wang**, Sugato Basu, Wenhu Chen, William Yang Wang. *T2V-Turbo: Breaking the Quality Bottleneck of Video Consistency Model with Mixed Reward Feedback.* NeurIPS 2024, poster. [paper]
- Alon Albalak, Yanai Elazar, Sang Michael Xie, Shayne Longpre, Nathan Lambert, **Xinyi Wang**, Niklas Muennighoff, Bairu Hou, Liangming Pan, Haewon Jeong, Colin Raffel, Shiyu Chang, Tatsunori Hashimoto, William Yang Wang. *A Survey on Data Selection for Language Models.* TMLR 2024. [paper]
- **Xinyi Wang**, Alfonso Amayuelas, Kexun Zhang, Liangming Pan, Wenhu Chen, William Yang Wang. *Understanding the Reasoning Ability of Language Models From the Perspective of Reasoning Paths Aggregation.* ICML 2024, poster. [paper]
- Iain Xie Weissburg, Mehir Arora, **Xinyi Wang**, Liangming Pan, William Yang Wang. *Tweets to Citations: Unveiling the Impact of Social Media Influencers on AI Research Visibility.* ICML 2024 (position paper), poster. [paper]
- **Xinyi Wang**, Lucas Caccia, Oleksiy Ostapenko, Xingdi Yuan, William Yang Wang, Alessandro Sordoni. *Guiding Language Model Math Reasoning with Planning Tokens.* COLM 2024, poster. [paper]
- Liangming Pan, Michael Saxon, Wenda Xu, Deepak Nathani, **Xinyi Wang**, William Yang Wang. *Automatically Correcting Large Language Models: Surveying the landscape of diverse self-correction strategies.* TACL 2023. [paper]
- Liangming Pan, Alon Albalak, **Xinyi Wang**, William Yang Wang. *Logic-LM: Empowering Large Language Models with Symbolic Solvers for Faithful Logical Reasoning.* Findings of EMNLP 2023. [paper]
- Wenhu Chen, Ming Yin, Max Ku, Pan Lu, Yixin Wan, Xueguang Ma, Jianyu Xu, **Xinyi Wang**, Tony Xia. *TheoremQA: A Theorem-driven Question Answering dataset.* EMNLP 2023, poster. [paper]
- Wanrong Zhu, **Xinyi Wang**, Yujie Lu, Tsu-Jui Fu, Xin Eric Wang, Miguel Eckstein, William Yang Wang. *Collaborative Generative AI: Integrating GPT-k for Efficient Editing in Text-to-Image Generation.* EMNLP 2023, poster. [paper]
- **Xinyi Wang**, Wanrong Zhu, Michael Saxon, Mark Steyvers, William Wang. *Large Language Models Are Latent Variable Models: Explaining and Finding Good Demonstrations for In-Context Learning.* NeurIPS 2023, poster. [paper]
- Wenhu Chen, Xueguang Ma, **Xinyi Wang**, William W. Cohen. *Program of Thoughts Prompting: Disentangling Computation from Reasoning for Numerical Reasoning Tasks.* TMLR 2023. [paper]
- **Xinyi Wang**, Michael Saxon, Jiachen Li, Hongyang Zhang, Kun Zhang, William Yang Wang. *Causal Balancing for Domain Generalization.* ICLR 2023, poster. [paper]
- Michael Saxon, **Xinyi Wang**, Wenda Xu, William Yang Wang. *Relation Leakage in Elicited Natural Language Inference Datasets.* EACL 2023, poster. [paper]
- Wenhu Chen, **Xinyi Wang**, William Yang Wang. *A Dataset for Answering Time-Sensitive Questions.* NeurIPS 2021 Datasets and Benchmarks Track, poster. [paper]
- **Xinyi Wang**, Wenhu Chen, Michael Saxon, William Yang Wang. *Counterfactual Maximum Likelihood Estimation for Training Deep Networks.* NeurIPS 2021, poster. [paper]
- Michael Saxon, Sharon Levy, **Xinyi Wang**, Alon Albalak, William Yang Wang. *Modeling Discolsive Transparency in NLP Application Descriptions.* EMNLP 2021, oral. [paper]
- **Xinyi Wang***, Haiqin Yang*, Liang Zhao, Yang Mo and Jianping Shen. *RefBERT: Compressing BERT by Referencing to Pre-computed Representations.* IJCNN 2021, oral. [paper]
- **Xinyi Wang**, Yi Yang. *Neural Topic Model with Attention for Supervised Learning.* AISTATS 2020, poster. [paper]

Internships

- **Research Intern at MIT-IBM Watson AI Lab** Cambridge, MA, US
  Mentor: Yikang Shen, Rameswar Panda *6.2024 - 9.2024*
  - Topic: theory of constructing pretraining data to facilitate language models' reasoning ability.
- **Research Intern at Microsoft Research** Montreal, QC, Canada
  Mentor: Alessandro Sordoni *6.2023 - 10.2023*
  - Topic: parameter-efficient fine-tuning to improve math reasoning ability of large language models.

Services

- Conference reviewer: AAAI (2022, 2023), NeurIPS (2021, 2023, 2024), ICLR (2024, 2025), ICML (2024), COLM (2024), AISTATS (2025)
- Journal reviewer: TPAMI (2024)