Xingyao Wang

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EDUCATION

- **University of Michigan** — Ann Arbor, MI
  Bachelor of Science in Computer Science and Data Science; GPA: 3.979 / 4.000 — *Sep. 2019 – May. 2022*
  - **Coursework**: Advance Artificial Intelligence, Natural Language Processing, Information Retrieval, Machine Learning, Theoretical Statistics, Web System, Probability, Data Structure and Algorithms, Computer Organization, Operating System.

PUBLICATIONS AND MANUSCRIPTS (* DENOTES EQUAL CONTRIBUTION)

[1] **An animated picture says at least a thousand words: Selecting Gif-based Replies in Multimodal Dialog**, Xingyao Wang, David Jurgens. *Findings of EMNLP, 2021.* [**link**]

[2] **Fake it til you make it: A large-scale field experiment in bootstrapping new communities through ecosystem-sourced content**, Tiago Cunha*, Xingyao Wang*, Xingyu Lu, Justin Huang, David Jurgens, Daniel Romero. *Manuscript in Preparation*

[3] **Impact of Cross Community Exposure on Early Community Growth**, Justin Huang, Tiago Cunha, Xingyao Wang, David Jurgens, Daniel Romero. *Manuscript in Preparation*

[4] **Towards Scalable Distributed Training of Deep Learning on Public Cloud Clusters**, Shaohuai Shi*, Xianhao Zhou*, Shutao Song*, Xingyao Wang, et al. *Machine Learning and Systems, 2021.* [**link**]

[5] **Lane Extraction and Quality Evaluation: A Hough Transform Based Approach**, Xingyao Wang, Da Yan, et al. *Proceedings of IEEE 3rd International Conference on Multimedia Information Processing and Retrieval, August 2020.* [**link**]

RESEARCH EXPERIENCE

- **University of Michigan** — Ann Arbor, MI
  Research Assistant, working with David Jurgens, Daniel Romero, Rada Mihalcea, and Joyce Chai — *Sep. 2019 - Present*
  - **Selecting Gif-based Replies in Multimodal Dialog**: Paper [1] accepted by Findings of EMNLP 2021. [**link**]
  - **A large-scale field experiment in bootstrapping new communities through ecosystem-sourced content**: Manuscript in Preparation [2-3]. We aimed to investigate the causal impact of early-stage dynamics within a newly created community on the success of the communities. In this project, I built a large-scale NLP-based interactive system to perform a field experiment to intervene in early communities and influence their early dynamics.
  - **Evaluation for Embodied Instruction Following**: Working with Prof. Joyce Chai, we proposed an evaluation framework through test set splitting that aligns better with realistic human task-performing heuristics and new metrics to evaluate the results of robots' exploration. We also work on language-guided exploration that emphasize the importance of language guidance from humans (i.e., descriptions) on task performance.
  - **Episodic Memory for Embodied AI**: Working with Prof. Joyce Chai, we proposed a episodic memory that maintains past experiences (e.g., egocentric view, language instruction, history interactions) to assists goal localization in instruction following task, as well as constructing representations for unique object instances.
  - **Joke Generation**: Inspired by the script writing methodology from Late-night talk show, I am working with Prof. Rada Mihalcea to build a humor system that uses news headlines to generate humorous punchlines through controlled generation.

WORK EXPERIENCE

- **University of Michigan, College of Engineering** — Ann Arbor, MI
  Instructional Aide, EECS 492: Intro to Artificial Intelligence — *Jan. 2021 - Present*

- **ByteDance AI Lab** — Beijing, China
  Natural Language Processing Intern, Machine Learning and Natural Language Computing — *May. 2021 - Aug. 2021*
  - **LightSeq, A High Performance Library for Sequence Processing and Generation**: Open-sourced at [**link**].

- **Tencent** — Shenzhen, China
  Software Engineer Intern (Deep Learning), Jizhi HPC Team, Technology Engineering Group (TEG) — *May. 2020 - Sep. 2020*
  - **Trained ResNet50 on ImageNet dataset in record-breaking 2 minute**: Paper [4] accepted by MLSys 2021. [**link**]

HONORS AND AWARDS

- Honorable Mention, Computing Research Association Outstanding Undergraduate Researcher Award [**link**] — 2022
- EMNLP Student Travel Award (5 out of 94) — 2021
- James B. Angell Scholar, University of Michigan — 2021
- University Honors, University of Michigan — 2017 - 2021
- Peiyang Chunhui Scholarship, Tianjin University — 2018

SKILLS AND CERTIFICATIONS

- **Skills**: Natural Language Processing, High Performance Computing (Deep Learning), Computer Vision, Machine Learning
- **Programming Language**: Python, C++, CUDA, C, R
- **Software**: PyTorch, TensorFlow, JupyterLab, scikit-learn, horovod, docker, ElasticSearch, Flask, React, SQL, Bash, AWS, Spacy
- **Coursera Certification**: Deep Learning Specialization [**link**]; Python for Everybody Specialization [**link**]

SERVICE

- *Student Volunteer*, EMNLP — 2021