Haozhe Wang

jasper.whz@outlook.com
(+86) 13916286948

Education & Employment

2022.07 – present — Research Engineer, **Alibaba Group** on Recommender Systems.
- Research Advisor: *Chao Du* (now at Sea AI).
- Foster Business Growth by 40% in revenue. Establish tech impact (KDD22, KDD23).

2019.09 – 2022.07 — M.Sc. Computer Science, **ShanghaiTech University**.
- Supervisor: *Xuming He*, Associate Professor.
- GPA: 3.83/4.0 (Rank 2%).
- Honors: **Outstanding Graduates** of Shanghai. (No. 20221442303013)

2015.09 – 2019.07 — B.Sc. Computer Science, **Wuhan University**.
- GPA: 3.88/4.0 (Rank 1%)
- Honors: ***National Scholarship*** (in 2017 No. 11959)

Research Experience

I have research experience in various topics, including RL, Robust Generalization, Transformers, Learning to Rank.

• Rapid and Robust Generalization of RL

KDD 2023 — **Adversarial Constrained Bidding via Minimax Regret Optimization.** [*paper*]
- CCF-A. First & Correspondence Author.
- TLDR: To make a policy robust and adaptive in black-box adversarial environments, we proposed a minimax game formulation, which guarantees the generalization of the worst-case performance.

KDD 2022 — **ROI-Constrained Bidding via Curriculum-Guided Bayesian Reinforcement Learning.** [*paper*]
- CCF-A. First & Correspondence Author.
- TLDR: To address sparse reward, we use a curriculum learning procedure for efficient policy learning. To make policy adaptive in non-stationary environment, we introduce a Variational Bayes formulation.

AAMAS 2020 — **Context-aware Task Reasoning for Efficient Meta-Reinforcement Learning.** [*paper*]
- CCF-B. First Author.
- TLDR: We highlight the significance of task-exploration in meta-RL. We propose a Variational EM learning framework to jointly learn task-exploration, task-inference and task-execution.

• Vision and Language

ICCV 2023 — **Grounded Image-Text Matching with Mismatched Relation Reasoning.** [*paper*]
- CCF-A. Third Author.
- TLDR: We find that transformer-based vision-language model is limited in length generalization. We proposed a modular program approach which leverages the language structure to avoid the train-test mismatch in length.

• Robust Estimation

Preprint — **Unleashing the Potential of IRLS for Robust Relative Camera Pose Estimation.**
- **CVPR** 2024 submission. CCF-A. First Author (equal contribution).
- TLDR: We explore the potential of IRLS for relative camera pose estimation. We propose a principled robust estimation framework that involves less heuristics and hyper-parameter tuning.

• Learning to Rank

Work — Learning Human Preference from Binary and Real-Valued Feedback.
- Work as a research engineer at Alibaba.
- Key Concepts & Techniques: Pair-wise Loss, Ordinal Regression.

Research Interests

My current research focus is on Generative AI. Recently I am interested and have surveyed the following directions of LLMs:

- *Robust & Trustworthy Generation.*
  - Retrival-Augmented Generation (RAG):
    - handling retrieval errors;
    - effectively using long context (for factual consistency), e.g., addressing 'Lost in the Middle' phenomenon.
  - Factuality & Hallucinations & LLM Alignment, e.g.,
    - grounded evidence, citations;
    - handling free-form document (texts and tables)
    - long-form output, e.g., Long-Form QA.
  - Finetuning & Alignment
    - handling biases, e.g., confirmation bias;
    - handling alignment black-box, inconsistent or conflicting judgement
    - second-order oversight, multi-agent alignment
- *Knowledge Editing.* When pre-trained LLM contain misinformation, how to inject new facts with entailments?
- *LLM Lifelong Learning.*

Misc

Services	Peer review experience in KDD 2022, KDD 2023.
English	Fluent Writing. Scores: CET4 661/710, CET6 611/710, TOFEL 106/120, GRE 326/340.
Coding	Proficiency in PyTorch, TensorFlow and common libraries for ML research.