Bingbing Wen

Website: https://bbwen.github.io/ E-mail: bingbw@uw.edu

Education

2020-present	University of Washington, Seattle, WA, USA **Ph.D. in Information Science (Advisors: Lucy Lu Wang, Bill Howe)**
2016-2018	University of Hong Kong, Hong Kong **M.S. in Computational Science & Engineering (Artifical Intelligence)**
2012-2016	Zhejiang University, Hangzhou, China **B.S. in Control Science & Engineering (Robotics)**

Research Experience

- **Data Efficiency through Curation and Optimization**. Optimizing data mixtures and designing fine-grained preference signals that go beyond correctness (e.g., distinguishing between correct, abstention, and spurious cases).
- **Model Efficiency via Modular and Adaptive Architectures**. Exploring mixture-of-LoRA-experts, routing mechanisms and reinforcement learning approaches to enhance collaboration among multiple specialized models to dynamically allocate compute to the most relevant experts.
- **Evaluation for Efficient Reliability**. Designing abstention and confidence-based evaluation frameworks that help models decide when not to compute unnecessary outputs-supporting selective computation and reliability under resource constraints

Selected Publications (* Equal Contribution)

1. **Data Mixture Optimization for Multimodal Midtraining**
   Bingbing Wen, Sirajul Salekin, Feiyang Kang, Lucy Lu Wang, Bill Howe, Javier Movellan, Manjot Bilkhu
   CVPR Submission, 2025
2. **Asking the Missing Piece: Context-Driven Clarification for Ambiguous VQA**
   Zongwan Cao*, **Bingbing Wen***, Lucy Lu Wang
   NeurIPS Foundations of Reasoning in Language Models Workshop & CVPR Submission, 2025
3. **MARVEL: Modular Abstention for Reliable and Versatile Expert LLMs**
   Bingbing Wen, Faeze Brahman, Zhan Su , Shangbin Feng, Yulia Tsvetkov, Lucy Lu Wang, Bill Howe
   ICML Reliable Foundation Model Workshop & ICLR Submission, 2025
4. **AutoScale: Automatic Prediction of Compute-optimal Data Composition for Training LLMs**
   Feiyang Kang*, Yifan Sun*, **Bingbing Wen**, Si Chen, Dawn Song, Rafid Mahmood, Ruoxi Jia
   COLM, 2025
5. **Know Your Limits: A Survey of Abstention in Large Language Models**
   Bingbing Wen, Jihan Yao, Shangbin Feng, Chenjun Xu, Yulia Tsvetkov, Bill Howe, Lucy Lu Wang
   TACL & ACL Oral, 2025
6. **Do Language Models Mirror Human Confidence? Exploring Psychological Insights to Address Overconfidence in LLMs**
   Chenjun Xu*, **Bingbing Wen***, Bin Han, Robert Wolfe, Lucy Lu Wang, Bill Howe
   ACL Findings, 2025
7. **Characterizing LLM Abstention Behavior in Science QA with Context Perturbations**
   Bingbing Wen, Bill Howe, Lucy Lu Wang
   EMNLP Findings, 2024

8. **Mitigating Overconfidence in Large Language Models: A Behavioral Lens on Confidence Estimation and Calibration**
   Bingbing Wen*, Chenjun Xu*, Bin Han, Robert Wolfe, Lucy Lu Wang, Bill Howe
   NeurIPS BehaviourML Workshop, 2024
9. **InfoVisDial: An Informative Visual Dialogue Dataset by Bridging Large Multimodal and Language Models**
   Bingbing Wen, Zhengyuan Yang, Jianfeng Wang, Zhe Gan, Bill Howe, Lijuan Wang
   Preprint
10. **CCQ: Cross-Class Query Network for Partially Labeled Organ Segmentation**
    Xuyang Liu*, **Bingbing Wen***, Sibei Yang
    AAAI, 2023
11. **Expscore: Learning metrics for recommendation explanation**
    Bingbing Wen, Yunhe Feng, Yongfeng Zhang, Chirag Shah
    WWW, 2022

Professional Experience

2025.9-present	**Research Intern, Amazon** **Reinforcement Learning for Multi-turn Confidence Updating in Large Language Models**
2025.6-2025.9	**Research Intern, APPLE** **Publication/preprint 1.MMMix** Mentors: Manjot Bilkhu, Javier Movellan
2023.6-2023.9	**Research Intern, OPPO Research.** **Storyboard LLM** Mentors: Ziwei Xuan, Guo-Jun Qi
2022.6-2022.9	**Research Intern, Microsoft Could AI** **Publication/preprint 9.InfoVisDial** Mentors: Zhengyuan Yang, Jianfeng Wang, Zhe Gan, Lijuan Wang
2018.5-2020.5	**Applied Research scientist, Tencent.** **Search/Ranking Model Training: Developed query-document semantic matching models and wide and deep CTR/CVR prediction models in QQ browser** Mentors: Tong Zhou, Bowei Long

Awards

2018	**HKU Chinese Post Graduate Scholarship**
2016	**Excellent Graduation Thesis, ZJU**
2015-2016	**Scholarship for Academic Excellence, ZJU**
2015-2016	**University-level Outstanding Student Cadres, ZJU**

Skills

- Python, C++/C, SQL, R, Matlab
- PyTorch, Tensorflow, Spark, Hive, OpenCV