Haizhou Shi

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Research Interests

Uncertainty Estimation, Continual Training, and Representation Learning in ML Models.

Education

Rutgers University New Jersey, US
Ph.D in Computer Science, focusing on Machine Learning Sept. 2022 – Present
Advisor: Professor Hao Wang.

Zhejiang University Hangzhou, China
M.Eng in Computer Science and Technology Sept. 2019 – June 2022
Advisors: Professors Siliang Tang, Yueting Zhuang.

Zhejiang University Hangzhou, China
B.Eng in Computer Science and Technology Sept. 2015 – June 2019
Mentors: Professors Siliang Tang, Yueting Zhuang.

Under Review

(2025) **Token-Level Uncertainty Estimation for Large Language Model Reasoning.**
Tunyu Zhang*, **Haizhou Shi***, Yibin Wang, Hengyi Wang, Xiaoxiao He, Zhuowei Li, Haoxian Chen, Ligong Han, Kai Xu, Huan Zhang, Dimitris Metaxas, Hao Wang.
arXiv preprint at arXiv:2505.11737

(2025) **Efficient Uncertainty Estimation via Distillation of Bayesian LLMs.**
Harshil Vejendla*, **Haizhou Shi***, Yibin Wang, Tunyu Zhang, Huan Zhang, Hao Wang.
arXiv preprint at arXiv:2505.11731

(2024) **Training-Free Bayesianization for Low-Rank Adapters of Large Language Models.**
Haizhou Shi*, Yibin Wang*, Ligong Han, Huan Zhang, Hao Wang.
ICLR-W'25, arXiv preprint at arXiv:2412.05723

Publication

(2025) **The Hidden Life of Tokens: Reducing Hallucination of Large Vision-Language Models via Visual Information Steering.**
Zhuowei Li, **Haizhou Shi**, Yunhe Gao, Di Liu, Zhenting Wang, Yuxiao Chen, Ting Liu, Long Zhao, Hao Wang, Dimitris N. Metaxas.
ICML'25, arXiv preprint at arXiv:2502.03628

(2025) **Continual Learning of Large Language Models: A Comprehensive Survey.**
Haizhou Shi, Zihao Xu, Hengyi Wang, Weiyi Qin, Wenyuan Wang, Yibin Wang, Zifeng Wang, Sayna Ebrahimi, Hao Wang.
ACM Computing Surveys, arXiv preprint at arXiv:2404.16789

(2024) **BLoB: Bayesian Low-Rank Adaptation by Backpropagation for LLMs.**
Yibin Wang*, **Haizhou Shi***, Ligong Han, Dimitris Metaxas, Hao Wang.
NeurIPS'24, arXiv preprint at arXiv:2406.11675

(2023) **A Unified Approach to Domain Incremental Learning with Memory: Theory and Algorithm.**

Haizhou Shi, Hao Wang.

NeurIPS'23, arXiv preprint arXiv:2310.12244

(2021) **On the Efficacy of Small Self-Supervised Contrastive Models without Distillation Signals.**

Haizhou Shi, Youcai Zhang, Siliang Tang, Wenjie Zhu, Yaqian Li, Yandong Guo, Yueting Zhuang.

AAAI'22 oral, arXiv preprint arXiv:2107.14762

(2021) **Towards Communication-Efficient and Privacy-Preserving Federated Representation Learning.**

Haizhou Shi, Youcai Zhang, Zijin Shen, Siliang Tang, Yaqian Li, Yandong Guo, Yueting Zhuang.

FL-AAAI-22 oral, arXiv preprint arXiv:2109.14611

(2021) **CIL: Contrastive Instance Learning Framework for Distantly Supervised Relation Extraction.**

Tao Chen, **Haizhou Shi**, Siliang Tang, Zhigang Chen, Fei Wu, and Yueting Zhuang.

ACL'21, arXiv preprint arXiv:2106.10855

(2019) **Informative Visual Storytelling with Cross-Modal Rules.**

Jiacheng Li, **Haizhou Shi**, Siliang Tang, Fei Wu, Yueting Zhuang.

ACM-MM'19, Proceedings of the 27th ACM International Conference on Multimedia

Work Experience

AI Research Intern, at Salesforce AI Research. Palo Alto, US

Mentors: Semih Yavuz, Yingbo Zhou. June 2025 – Aug. 2025

Led the research project on LLM reasoning.

Machine Learning Research Intern, at Morgan Stanley. New York, US

Mentors: Marin Bilos, Kashif Rasul. June 2024 – Aug. 2024

Led the research project on lifelong time series forecasting.

Research Intern, at OPPO Research Institute. Shanghai, China

Mentors: Youcai Zhang, Yandong Guo. Dec. 2020 – Nov. 2021

Led the research on self-supervised learning for lightweight backbones (paper available here).

Led the research on federated self-supervised learning (paper available here).

Research Intern, at Intel Asia-Pacific Research & Development LTD. Shanghai, China

Mentors: Shengsheng Huang, Jinquan Dai. Apr. 2019 – Aug. 2019

Conducted reinforcement learning research on the google football simulated environment, benchmarked multiple existing frameworks including DQN, PG, and IMPALA.

Service & Outreach

Life-long Fellow, at Melton Foundation. June 2016 – Present

Learned and practiced the concept of the global citizenship. Participated multiple global conferences on promoting and enabling global citizenship as a way for individuals and organizations to work together across boundaries of place and identity to address global challenges.

Reviewer, at Academic Conferences

Provided review services for multiple top-notched ML&AI conferences, including *ICML'25, ICLR'25, ACL ARR'25, AAAI'25, NeurIPS'24, ECCV'24, IJCAI'24, AAAI'24, AAAI'23, ICCV'23, ECCV'22.*