Haoran Liu

Department of Computer Science and Engineering
Texas A&M University

Contact: liuhr99@tamu.edu
Website: https://gloria-liu.github.io/

Education

- **Texas A&M University** *2021 - Now*
  Ph.D. in Computer Science
  Department of Computer Science and Engineering
  Advisor: Prof. James Caverlee

- **Waseda University** *2017 - 2019*
  M.E. in Information Engineering
  Advisor: Prof. Sei-ichiro Kamata
  Thesis: Hybrid Featured based Pyramid Structured CNN for Texture Classification.

- **Southeast University** *2014 - 2018*
  B.E. in Information Engineering
  Advisor: Prof. Chuan Zhang
  Thesis: Research on Stochastic Computing Architecture for Deep Learning.

Research Interests

- Deep Learning on Graphs
- Large Language Model Reasoning
- Geometric Learning for Drug Discovery

Professional Experience

- **NEC Labs America**, Princeton, NJ *May 2023 - August 2023*
  Research Intern
  Machine Learning Department
  Worked on conditional molecule generation.
  Mentor: Martin Renqiang Min

- **Baidu Research**, Beijing, China *June 2020 - September 2020*
  Research Intern
  Big Data Lab
  Worked on the interpretability of deep neural networks.
  Mentor: Haoyi Xiong, Dejing Dou

Publications [Google Scholar]

* indicates equal contribution.

- Rui Yang, **Haoran Liu**, Edison Marrese-Taylor, Qingcheng Zeng, Yuhe Ke, Wanxin Li, Lechao Cheng, Qingyu Chen, James Caverlee, Yutaka Matsuo, Irene Li
  KG-Rank: Enhancing Large Language Models for Medical QA with Knowledge Graphs and Ranking Techniques
  In submission of ACL 2024.

- Maria Teleki, Xiangjue Dong, **Haoran Liu**, James Caverlee
  The *Who*, *What*, and *How* of Podcasts: A Large-Scale Analysis of the Topics, Discourse Style, and Gender in Spoken Content.
  In submission of ICWSM 2024.

- **Haoran Liu**, Youzhi Luo, James Caverlee, Martin Renqiang Min
  Learning Disentangled Equivariant Representation for Explicitly Controllable 3D Molecule Generation.
  In submission of ICML 2024.

- **Haoran Liu**, Jianling Wang, Kaize Ding, James Caverlee
  Topological and Temporal Data Augmentation for Temporal Graph Networks.
  NeurIPS 2023 Temporal Graph Learning Workshop.

- **Haoran Liu**, Bokun Wang, Jianling Wang, Xiangjue Dong, Tianbao Yang, James Caverlee
  Everything Perturbed All at Once: Enabling Differentiable Graph Attacks.
  International Conference on World Wide Web (**WWW**), 2024. Short Paper Track.

- Limei Wang*, **Haoran Liu***, Yi Liu*, Jerry Kurtin, and Shuiwang Ji
  Learning Protein Representations via Complete 3D Graph Networks.
  International Conference on Learning Representations (**ICLR**), 2023

- Meng Liu, **Haoran Liu**, and Shuiwang Ji
  Gradient-Guided Importance Sampling for Learning Discrete Energy-Based Models.
  International Conference on Learning Representations (**ICLR**), 2023

- Limei Wang*, Yi Liu, Yuchao Lin, **Haoran Liu**, and Shuiwang Ji
  ComENet: Towards Complete and Efficient Message Passing for 3D Molecular Graphs.
  Thirty-Sixth Conference on Neural Information Processing Systems (**NeurIPS**), 2022.

- **Haoran Liu**, Haoyi Xiong, Yaqing Wang, Haozhe An, Dejing Dou, Dongrui Wu
  Exploring the common principal subspace of deep features in neural networks.
  Machine Learning (**MLJ**), 2022, Springer.

- Meng Liu*, Youzhi Luo*, Limei Wang*, Yaochen Xie*, Hao Yuan*, Shurui Gui*, Haiyang Yu*, Zhao Xu, Jingtun Zhang, Yi Liu, Keqiang Yan, **Haoran Liu**, Cong Fu, Bora Oztekin, Xuan Zhang, and Shuiwang Ji
  DIG: A Turnkey Library for Diving into Graph Deep Learning Research.
  Journal of Machine Learning Research (**JMLR**), 2021

- Yuqi Li, Sei-Ichiro Kamata, **Haoran Liu**
  Edge-guided Hierarchically Nested Network for Real-time Semantic Segmentation.
  IEEE International Conference on Signal and Image Processing Applications (ICSIPA) 2019.
  Best Paper Award.

- **Haoran Liu**, Sei-Ichiro Kamata, Yuqi Li
  Hybrid Featured based Pyramid Structured CNN for Texture Classification.
  IEEE International Conference on Signal and Image Processing Applications (ICSIPA) 2019.

Academic Service

- **Conference Reviewer/PC Member**: CVPR (24'), ICLR (23', 24'), NeurIPS (23'), NeurIPS Dataset and Benchmark Track (22', 23'), KDD (23'), SIGIR (23'), LoG (22', 23'), ICDM (20'), etc.
- **Journal Reviewer**: IEEE TNNLS, IEEE Trans Cybern.

Scholarships, Awards, & Honors

- D. E. Shaw Research Graduate and Postdoctoral Women's Fellowship. 2023
- IPS Special Scholarship for International Student, Waseda University. 2017 - 2018
- Foundation for the Advancement of Industry, Science and Technology (FAIS) Scholarship. 2017 - 2018
- Second Prize in National Undergraduate Electronics Design Contest. 2016