Haoyu Li
MAK D-2-220, 1 Campus Dr, Allendale, MI 49401
+1 (614)687-7801 | lihao@gvsu.edu

Education

Ph.D., Computer Science & Engineering, The Ohio State University, Columbus OH
[Aug 2017 – May 2024]
Dissertation topic: Efficient Visualization for Machine-Learning-Represented Scientific Data
Advisor: Professor Han-Wei Shen
M.S., Computer Science & Engineering, May 2024 (en route to Ph.D.)

B.S., Psychology, Beijing Normal University, Beijing, China
[Sept 2013 – July 2017]

Experience

Assistant Professor, Grand Valley State University, Allendale MI
[Aug 2024 – Now]

Research Intern, Los Alamos National Lab, Los Alamos NM
[May – Aug 2022]
- Large spatial 3D scientific data reduction using implicit neural representations and Gaussian process.
- Accelerating visualization algorithms on reduced data representations.

Research Intern, VISA Inc, Palo Alto CA
[May – Aug 2021]
- Visualizing and explaining latent space generated from neural network models.

Research Intern, VISA Inc, Palo Alto CA
[May – July 2020]
- Visualizing and explaining Graph Neural Networks.

Publications

- Yi-Tang Chen, **Haoyu Li**, Neng Shi, Xihaier Luo, Wei Xu, and Han-Wei Shen "Explorable INR: An Implicit Neural Representation for Ensemble Simulation Enabling Efficient Spatial and Parameter Exploration". *IEEE Transactions on Visualization and Computer Graphics*. (Proc. Pacific VIS 2025).
- **Haoyu Li**, Isaac J Michaud, Ayan Biswas, and Han-Wei Shen "Efficient Level-Crossing Probability Calculation for Gaussian Process Modeled Data." *2024 IEEE Pacific Visualization Symposium* (PacificVis)
- **Haoyu Li** and Han-Wei Shen "Improving Efficiency of Iso-Surface Extraction on Implicit Neural Representations Using Uncertainty Propagation." *IEEE Transactions on Visualization and Computer Graphics*, 2024
- **Haoyu Li**, Junpeng Wang, Yan Zheng, Liang Wang, Wei Zhang, and Han-Wei Shen "Compressing and Interpreting Word Embeddings with Latent Space Regularization and Interactive Semantics Probing." *Information Visualization*, 2023
- **Haoyu Li**, Tianyu Xiong, and Han-Wei Shen "Efficient Interpolation-based Pathline Tracing with B-spline Curves in Particle Dataset." *IEEE VIS*, 2022
- Neng Shi, Jiayi Xu, **Haoyu Li**, Hanqi Guo, Jonathan Woodring, and Han-Wei Shen "VDL-Surrogate: A View-Dependent Latent-based Model for Parameter Space Exploration of Ensemble Simulations." *IEEE VIS* [Best Paper Honorable Mention Award], 2022
- Jingyi Shen, **Haoyu Li**, Jiayi Xu, Ayan Biswas, and Han-Wei Shen "IDLat: An Importance-Driven Latent Generation Method for Scientific Data." *IEEE VIS*, 2022

- Pil Jung Kang, Rachel Mullner, **Haoyu Li**, Derek Hansford, Han-Wei Shen, Hay-Oak Park "Up-regulation of the Cdc42 GTPase limits the replicative life span of budding yeast." *Molecular Biology of the Cell*, 2022
- **Haoyu Li** and Han-Wei Shen: "Local Latent Representation based on Geometric Convolution for Particle Data Feature Exploration." *IEEE Transactions on Visualization and Computer Graphics*, 2022
- Subhashis Hazarika, **Haoyu Li**, Ko-Chih Wang, Han-Wei Shen, and Ching-Shan Chou "NNVA: Neural Network Assisted Visual Analysis of Yeast Cell Polarization Simulation." *IEEE VIS* [Best Paper Honorable Mention Award], 2019

Grants

- Explaining Spatiotemporal Prediction Model via Visual Analytics, College of Computing Research Seed Grant, Grand Valley State University, PI, $15,000
- Explainable AI in Cybersecurity, Center for Scholarly and Creative Excellence Mini Grant, Grand Valley State University, $500
- Faculty Scholarly Dissemination Grant-in-Aid, Center for Scholarly and Creative Excellence, Grand Valley State University, $600

Teaching

- CIS 343 (Structure Programming Languages)
- CIS 671 (Information Visualization)
- CIS 367 (Computer Graphics)