

# Zhimin Li

## Education

- 2016–present **PhD, Computer Science, University of Utah.**  
Advisor : Valerio Pasucci
- 2012 - 2015 : **Bachelor of Computer Science, University of Utah.**  
Thesis: "G-MAP: A High Dimension Data Grand Tour Map"
- 2012 - 2015 : **Bachelor of Applied Math, University of Utah.**

## Research Experience

### University of Utah

- Aug,2016 – present **Research Assistant.**  
My research focus encompasses the fields of visualization, explainable AI and high performance computing. I am interested in designing novel data visualization techniques to assist researchers from various scientific domains in studying large datasets and complex computation models.
- Lawrence Livermore National Laboratory
- May,2023 **Apply Lossy Compression in Generative Model Training.**  
Aug,2023 Apply state-of-art lossy compression technique, ZFP on generative model training for scientific simulation. The main goal is to reduce the size of training data (e.g. 500GB->20GB) without affecting the performance of the generative model.
- May,2018,2019 **Visualize, Model and Predict Silent Error Propagation.**
- Aug,2018,2019 Apply visualization, machine learning and data mining techniques to understand the impact of silent data corruption in high performance computation. Design efficient data analysis parallel solution to analyze large unstructured dataset.
- May,2016 – **High Dimensional Data Visualization and Analysis.**  
Aug,2016 Apply dimension reduction, clustering and statistical approaches to understand the complex high dimensional data. Design an interactive visualization system to help researchers to explore high dimensional data.

## Publications

### Journal Articles

- 2023 **Zhimin, Li**, Shusen Liu, Xin Yu, Kailkhura Bhavya, Jie Cao, Diffenderfer James Daniel, Peer-Timo Bremer, and Valerio Pasucci. "understanding robustness lottery": A geometric comparative visual analysis of neural network pruning approaches. *IEEE Transactions on Visualization and Computer Graphics (under submission)*, 2023.
- 2022 **Zhimin, Li**, Harshitha Menon, Kathryn Mohror, Shusen Liu, Luanzheng Guo, Peer-Timo Bremer, and Valerio Pasucci. A visual comparison of silent error propagation. *IEEE Transactions on Visualization and Computer Graphics*, pages 1–15, 2022.
- 2021 **Zhimin, Li**, Harshitha Menon, Dan Maljovec, Yarden Livnat, Shusen Liu, Kathryn Mohror, Peer-Timo Bremer, and Valerio Pasucci. Spotsdc: Revealing the silent data corruption propagation in high-performance computing systems. *IEEE Transactions on Visualization and Computer Graphics*, volume 27, pages 3938–3952, 2021.

- 2019 Shusen Liu, **Zhimin, Li**, Tao Li, Vivek Srikumar, Valerio Pascucci, and Peer-Timo Bremer. Nlize: A perturbation-driven visual interrogation tool for analyzing and interpreting natural language inference models. *IEEE Transactions on Visualization and Computer Graphics*, volume 25, pages 651–660, 2019.

#### Conference Proceedings

- 2021 **Zhimin, Li**, Harshitha Menon, Kathryn Mohror, Peer-Timo Bremer, Yarden Livant, and Valerio Pascucci. Understanding a program's resiliency through error propagation. In *Proceedings of the 26th ACM SIGPLAN Symposium on Principles and Practice of Parallel Programming*, PPOPP '21, page 362–373, New York, NY, USA, 2021. Association for Computing Machinery.
- 2018 Shusen Liu, Tao Li, **Zhimin, Li**, Vivek Srikumar, Valerio Pascucci, and Peer-Timo Bremer. Visual interrogation of attention-based models for natural language inference and machine comprehension. In *Proceedings of the 2018 Conference on Empirical Methods in Natural Language Processing: System Demonstrations*, pages 36–41, 2018.
- 2016 **Zhimin, Li**, Shusen Liu, and Valerio Pascucci. Grand-map: A high dimensional grand tour map. In *UROPP, University of Utah*, 2016.

#### Workshop and Poster

- 2018 **Zhimin, Li**, Harshitha Menon, Kathryn Mohror, Yarden Livant, and Valerio Pascucci. an information visualization system to analyze silent data corruption. In *The International Conference for High Performance Computing, Networking, Storage, and Analysis*, SC ' poster, 2018.
- 2016 **Zhimin, Li** and Alexander Lex. Why and when do students change majors? In *IEEE VIS*, demo, 2016.

### Scholarships & Awards

- 2022 IEEE E-science 18th Conference 2022 traveling scholarship  
2015 KLV Artificial/Machine Learning scholarship  
2015 C.M. Collins Endowed Scholarship

### Computer skills

Programming Languages	Python, PyTorch, C, C++, JAVA
Web Technologies	HTML 5, CSS, D3.js, Javascript
Database	MySQL

### Position of Responsibility

- 2021-2023 **IEEE VIS Reviewer.**  
2022 **IEEE Pacific VIS Reviewer.**  
2020 **IEEE VIS Volunteer.**  
2014 **ACM SIGMOD/PODS 2014 Volunteer.**  
2014 **Member of Pi Mu Epsilon, Honorary national mathematics society.**

### Teaching Assistantship

- Fall, 2018: **CS6962 Programming For Engineer**, University of Utah.  
Fall, 2017: **CS6962 Programming For Engineer**, University of Utah.  
Spring, 2016: **CS4150 Algorithm**, University of Utah.  
Fall, 2015: **CS3100 Models Of Computation**, University of Utah.