Mingwei Li

Vanderbilt University
Department of Computer Science

Website
Google Scholar
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Experience

Vanderbilt University
Postdoctoral Scholar, Research, 2021 - Present.

Education

University of Arizona
Doctor of Philosophy in Computer Science, 2016 - Aug 21, 2021.
Field: Data Visualization
Minor: Mathematics
Thesis: Algebraic Visual Design for Deep Learning
Advisor: Prof. Carlos Scheidegger

Hong Kong University of Science and Technology
Bachelor in Electronic Engineering, Honor Research Program, 2011 - 2015
Minor: Mathematics
Thesis: Wi-Fi based Indoor Localization
Advisor: Prof. Shenghui Song

Teaching

Department of Computer Science, University of Arizona
Teaching Assistant, CSC 245, Introduction to Discrete Structures, Summer 2018
Teaching Assistant, CSC 337, Web Programming, Fall 2016
Department of Electronic and Computer Engineering, HKUST
Student Helper, ELEC 1100, Introduction of Robotics, Fall 2012

Awards and Fellowships

GPSC Travel Grant
University of Arizona, Oct 2018
Graduate Assistantship, Department of Computer Science
University of Arizona, 2016-2021
Dean's List, School of Engineering
Hong Kong University of Science and Technology, 2011-2014
Scholarship for Continuing Undergraduate Students
Hong Kong University of Science and Technology, 2011-2014

Tools and Skills

JavaScript (D3.js, WebGL, React.js)
Python (PyTorch, Flask, Matplotlib)
Markdown, HTML&CSS, LaTeX
Lua (LÖVE, LÖVR, Neovim)
Linux, git, vim
Blender

Selected Works

Thesis, 2021

- **Algebraic Visual Design for Deep Learning** Mingwei Li. `https://repository.arizona.edu/handle/10150/661598`

Deep Learning Visualization, Multi-dimensional Data, 2017-Current

- **Neuralcubes: Deep representations for visual data exploration**. Zhe Wang, Dylan Cashman, Mingwei Li, Jixian Li, Matthew Berger, Joshua A Levine, Remco Chang, Carlos Scheidegger. 2021 IEEE International Conference on Big Data (Big Data), 550-561
- **UnProjection: Leveraging Inverse-Projections for Visual Analytics of High Dimensional Data.** Mateus Espadoto, Gabriel Appleby, Ashley Suh, Dylan Cashman, Mingwei Li, Carlos E Scheidegger, Erik Wesley Anderson, Remco Chang, Alexandru Cristian Telea. IEEE Transactions on Visualization and Computer Graphics, 2021
- [**Best Submission Award**] **Toward Comparing DNNs with UMAP Tour.** Mingwei Li, and Carlos Scheidegger. VISxAI workshop, IEEE VIS 2020. Available online `https://tiga1231.github.io/umap-tour/`
- **Visualizing Neural Networks with the Grand Tour** Mingwei Li, Zhenge Zhao, and Carlos Scheidegger. Distill.pub, 2020. Available at `https://distill.pub/2020/grand-tour/`
- **Visualizing Neuron Activations with the Grand Tour** Mingwei Li, Zhenge Zhao, Carlos Scheidegger. Proceedings of the Workshop on Visualization for AI (VISxAI), 2018.

Graphical Perceptions, User Studies, Algebraic Visualization, 2018-Current

- **Looks Good to Me: Visualizations as Sanity Checks** M. Correll, M. Li, G. Kindlmann, and C. Scheidegger. IEEE Transactions in Visualization and Computer Graphics (Proceedings of InfoVis), 2018.

Graph Drawing, 2020-Current

- **Visualizing Evolving Trees.** K Gray, M Li, R Ahmed, S Kobourov. arXiv preprint arXiv:2106.08843, 2022
- **Multicriteria Scalable Graph Drawing via Stochastic Gradient Descent,** $(SGD)^2$**.** R Ahmed, F De Luca, S Devkota, S Kobourov, M Li. IEEE Transactions on Visualization and Computer Graphics 28 (6), 2388-2399, 2021
- [**Best Paper Award**] **Graph Drawing via Gradient Descent,** $(GD)^2$**.** Ahmed R, De Luca F, Devkota S, Kobourov S, Li M. arXiv preprint arXiv:2008.05584. 2020 Aug 12. Demo: `http://hdc.cs.arizona.edu/~mwli/graph-drawing/`