Zilinghan Li

Campus Circle, 1010 W University Ave, Urbana, IL 61801
Email: zl52@illinois.edu | Website: Zilinghan.github.io | (+86) 151-3218-1124 | (+1) 217-904-2831

Education

Zhejiang University Sep. 2018 – Jun. 2022
Bachelor of Engineering in Electronic and Computer Engineering (double degree) GPA: 3.99/4.0

University of Illinois at Urbana–Champaign Sep. 2018 – May. 2022
Bachelor of Science in Computer Engineering (double degree) GPA: 3.95/4.0

Publications

Conference Paper

[Pub1] Li Z., He S., Du Y., González S., Schewe KD. Unbounded Barrier-Synchronized Concurrent ASMs for Effective MapReduce Processing on Streams. In *Rigorous State-Based Methods. ABZ 2021.* Lecture Notes in Computer Science, vol 12709. Springer, Cham. **[Paper]**

Preprint Paper

[Pub2] Yuan X.*, **Li Z.***, Wang G. ActiveMatch: End-to-end Semi-supervised Active Representation Learning, Submi--tted to *ICASSP 2022*. (*: equal contributions) **[Paper]**

[Pub3] Wu Y., Miao X., **Li Z.**, He S., Yuan X., Gao Y., Yin J. SEMI: A Scalable and Extendible Generative Adversarial Imputation Toolbox. Submitted to *SIGMOD 2022*.

Selected Projects and Research

Movie Characters Recognition using Deep Learning | ***Python*** Sep. 2021 - Present
Advisor: Prof. Volodymyr Kindratenko, University of Illinois at Urbana–Champaign

- Built a deep learning network that can return the time slots in which each main character appears. The model can serve as a handy tool for generating statistical data to assist movie analysis.
- Applied the semi-supervised learning method to train the face recognition network to fully leverage the unlabeled images from movies and reduce the required number of labeled images.

End-to-end Semi-supervised Active Representation Learning [Pub2] | ***Python*** Jun. 2021 - Sep. 2021
Advisor: Prof. Gaoang Wang, Zhejiang University

- Proposed an end-to-end semi-supervised learning (SSL) method named ActiveMatch, which combined SSL, contrastive learning, and active learning. It solved the drawbacks of current SSL methods such as ambiguous representations for inter-class samples, sensitivity to initialization, and inconvenience in building labeled sets.
- ActiveMatch reached **state-of-the-art** performance on SSL image classification benchmarks CIFAR-10 and CIFAR-100. On CIFAR-10, accuracy got improved by $1\% \sim 2\%$. On CIFAR-100, accuracy got improved by 4%.

A Scalable and Extendible Generative Adversarial Imputation Toolbox [Pub3] Jun. 2021 - Sep. 2021
Advisor: Prof. Xiaoye Miao, Zhejiang University

- Proposed an improved generative adversarial network (GAN) based missing data imputation method. It solved the problem of vanishing gradient and speeded up the model training by **7.5x** on average.
- Built an imputation toolbox with the GAN-based model embedded, which can serve as a powerful GUI tool for data scientists to upload, merge, preprocess and impute their datasets.

Unbounded Barrier-Synchronized Concurrent ASMs [Pub1] | ***C++*** May. 2020 - May. 2021
Advisor: Prof. Klaus-Dieter Schewe, Zhejiang University

- Based on the bulk-synchronous parallel (BSP) model, extended the normal MapReduce algorithm from processing large finite datasets to processing stream queries with input data assumed to continue indefinitely.
- Extended the BSP model to the Infinite-Agent BSP model capturing an unbounded number of agents. A behavioral theory was developed for the extended model as well.

Teaching Assistant Experience

Math 241 (Calculus III): Basic Linear Algebra, Vector Functions, Multivariate Calculus, Vector Fields
ECE 120 (Intro to Computing): Bit Representation, C Programming, Transistors to Circuits, Finite State Machines, LC-3 (Little Computer) and Programming

Selected Honors and Awards

Provincial Government Scholarship of Zhejiang Province 2021
Top 3% university students in Zhejiang province

National Scholarship 2020
0.2% of Chinese university students get this award

Zhejiang University Scholarship - First Prize 2020
Top 3% students in Zhejiang University

Zhejiang University Scholarship - Second Prize 2019, 2021
Top 8% students in Zhejiang University

Skills

Programming Languages: Python, C, C++, System Verilog, MATLAB, SQL
Tools: PyTorch, Latex, Git, CUDA
Languages: Mandarin, English (**TOEFL: 112** Listening: 30, Reading: 29, Writing: 29, Speaking: 24)

Extracurricular Activities

Champion of Zhejiang University Sanhao Football Cup
Champion of Zhejiang University International Campus Freshmen Football Cup as the **captain**
Volunteer teaching in Guilin, Guangxi Province, China, in 2019 summer