Zilinghan Li

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Education

University of Illinois at Urbana–Champaign Champaign, IL
Master of Science in Computer Science Aug. 2022 – May. 2024

University of Illinois at Urbana–Champaign Champaign, IL
*Bachelor of Science in Computer Engineering (Graduation with **Highest** Honor)* | GPA: 3.89 / 4.0 Sep. 2018 – May. 2022

Zhejiang University Hangzhou, China
Bachelor of Engineering in Electronic and Computer Engineering | GPA: 3.97 / 4.0 Sep. 2018 – Jun. 2022

• Relevant Coursework: Database Systems, Distributed Systems, Computer Systems Engineering, Communication Networks, Artificial Intelligence, Applied Parallel Programming, Introduction to Algorithms, Data Structures.

• Selected Honors: UIUC Highest Honor at Graduation (2022), Outstanding Graduate of Zhejiang Province (4%, 2022), National Scholarship ($< 1\%$, 2019), Provincial Government Scholarship of Zhejiang Province (3%, 2021).

• Teaching Assistant: ECE 120: Introduction to Computing (2021, 2022), Math 241: Calculus III (2020)

Publications

• Yuan X.*, **Li Z.***, Wang G. ActiveMatch: End-to-end Semi-supervised Active Representation Learning. Accepted by *IEEE International Conference on Image Processing (ICIP) 2022*. (*: equal contributions) **[Paper]**

• **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]**

Selected Projects and Research

Video Character Tracker | ***Python*** Champaign, IL
Advisor: Prof. Volodymyr Kindratenko, University of Illinois at Urbana–Champaign Oct. 2021 - Jun. 2022

• Proposed a semi-supervised learning method with triplet loss to achieve ~98% face recognition accuracy by using two face images per person.

• Designed a video character tracker to return the appearing time slots for characters by combining the proposed semi-supervised face recognition network and multi-human tracker.

End-to-end Semi-supervised Active Representation Learning | ***Python*** Haining, China
Advisor: Prof. Gaoang Wang, Zhejiang University Jun. 2021 - Feb. 2022

• Proposed a semi-supervised learning (SSL) method by combining SSL, contrastive learning, and active learning.

• Solved the drawbacks of current SSL methods such as ambiguous representations for inter-class samples, sensitivity to initialization, and inconvenience in building labeled sets.

• Reached **state-of-the-art** performance on SSL image classification benchmarks CIFAR-10 (1%~2% improvement) and CIFAR-100 (4% improvement).

Ebook Service and Management System | ***Spring Boot & Vue*** Champaign, IL
Advisor: Prof. Abdussalam Alawini, University of Illinois at Urbana–Champaign Sep. 2021 - Dec. 2021

• Developed a web page which displays the contents of ebooks according to the two-level category.

• Set up ebook management web pages to access and change the database from the front-end.

• Implemented a login interface for administrators to access the management pages and change the database safely.

A Scalable and Extendible Generative Adversarial Imputation Toolbox | ***Python*** Hangzhou, China
Advisor: Prof. Xiaoye Miao, Center for Data Science, Zhejiang University Jun. 2021 - Sep. 2021

• Proposed an improved generative adversarial network (GAN) based missing data imputation method, which speeded up the model training by **7.5x** on average.

• Built an imputation toolbox with the GAN-based model embedded via PyQt, which served as a powerful GUI tool for data scientists to upload, merge, preprocess and impute their datasets.

Linux-like Operating System Supporting Multiple Terminals | ***C, x86-Assembly*** Remote
Advisor: Prof. Lumetta and Kalbarczyk, University of Illinois at Urbana–Champaign Mar. 2021 - May. 2021

• Developed an operating system with three students from scratch, including basic device supports, interrupt handlers, multiple shells, schedulers, dynamic memory allocation and writable file-system.

Skills

Programming Languages: Python, C++, C, Java, System Verilog, MATLAB, SQL
Tools: PyTorch, Spring Boot, Vue, Git, CUDA, LaTeX