

ZILINGHAN LI

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EDUCATION

University of Illinois at Urbana-Champaign

Master of Science in Computer Science

Champaign, IL

Aug. 2022 – May. 2024

University of Illinois at Urbana-Champaign

Bachelor of Science in Computer Engineering (Graduation with **Highest Honor**) | GPA: 3.89 / 4.0

Champaign, IL

Sep. 2018 – May. 2022

Zhejiang University

Bachelor of Engineering in Electronic and Computer Engineering | GPA: 3.97 / 4.0

Hangzhou, China

Sep. 2018 – Jun. 2022

- 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: Artificial Intelligence (2022), Introduction to Computing (2021, 2022), 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*. **[Paper]**

SELECTED PROJECTS AND RESEARCH

Video Character Tracker | Python

Champaign, IL, 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 character appearing time slots by combining the semi-supervised face recognizer and multi-human tracker, which reaches ~80% intersection-over-union accuracy on collected datasets.

End-to-end Semi-supervised Active Representation Learning | Python

Haining, China, 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, Sep. 2021 - Dec. 2021

- Developed a web page which displays the contents of 1000+ ebooks according to the two-level category.
- Set up ebook management web pages to access and modify the database from the front-end.
- Implemented a login interface for administrators to access the management pages and modify the database safely.

TCP Protocol from Scratch | C

Champaign, IL, Oct. 2021 - Nov. 2021

- Implemented the TCP protocol based on UDP's sendto and recvfr to transmit gigabyte data reliably.
- Realized congestion avoidance and fast recovery features of the TCP protocol.
- Utilized at least 70% of bandwidth in a steady state without competing traffic.

GAN-based Missing Data Imputation Toolbox | Python

Hangzhou, China, 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, and embedded the model into a GUI toolbox.
- Employed pagination to decrease the time for opening large files with millions of items to less than 5 seconds.
- Supported more than 10 data pre-processing methods and 2 post-analysis methods in the toolbox.

Linux-like Operating System Supporting Multiple Terminals | C, x86-Assembly

Remote, Mar. 2021 - May. 2021

- Developed an operating system with three students from scratch, including OS functionalities such as basic device supports, interrupt handlers, system calls, dynamic memory allocation and writable file system.
- Implemented a round-robin scheduler to support three terminals running at the same time.

SKILLS

Programming Languages: Python, C++, C, Java, System Verilog, MATLAB, SQL, HTML, CSS

Tools: PyTorch, Spring Boot, Vue, Git, CUDA, LaTeX, MongoDB

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