

ZILINGHAN LI

📍 618 Corey Ln, Champaign, IL | ✉️ zl52@illinois.edu | 📞 447-902-1841 | 🌐 Zilinghan | 📄 zilinghanli

EDUCATION

University of Illinois at Urbana-Champaign

Master of Science in Computer Science | GPA: 4.0/4.0

Bachelor of Science in Computer Engineering | GPA: 3.89/4.0

Champaign, IL

Aug. 2022 – May. 2024

Sep. 2018 – May. 2022

Zhejiang University

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

Hangzhou, China

Sep. 2018 – Jun. 2022

- Selected Honors: UIUC Highest Honor at Graduation (2022), National Scholarship (< 1%, 2019).

SKILLS

Programming Languages: Python, C++, C, JavaScript, Dart, Java

Tools: PyTorch, AWS, Docker, React, Git, CUDA, SQL, NoSQL

WORK EXPERIENCE

Argonne National Laboratory

Graduate Visiting Student at Data Science Learning Division

Lemont, IL

Jan. 2023 - Present

- Led the project to build a platform for providing privacy-preserving federated learning as a service, which allows different institutions to easily and securely train robust machine learning models together without transferring large and private datasets. [Website]
- Led the development and maintenance of the Advanced Privacy-Preserving Federated Learning (APPFL) framework, adding features including asynchronous federated learning algorithms, model compression, personalizations, and new communication protocols. [Github]
- Designed and implemented a novel asynchronous federated learning algorithm for more efficient federated learning across heterogeneous client devices. [OpenReview]

Amazon Web Services

Software Development Engineer Intern

Sunnyvale, CA

May. 2023 - Aug. 2023

- Developed a mobile application for Android and iOS, aimed at helping customers learn about the AWS IoT Device Location API and showcasing its capabilities for resolving IoT device locations without a built-in GPS.

National Center for Supercomputing Applications

Student Research Assistant

Champaign, IL

Sep. 2021 - Dec. 2021

- Proposed a semi-supervised learning method with triplet loss to achieve more than 98.5% face recognition accuracy by only using two face images per person for training.
- Designed a video character tracker to return character appearing time slots by combining the semi-supervised face recognizer and multi-human tracker, which reaches 70%~80% tracking accuracy on collected datasets.

PUBLICATIONS AND PREPRINTS

- Li, Z., et al, 2024. FedCompass: Efficient Cross-Silo Federated Learning on Heterogeneous Client Devices using a Computing Power Aware Scheduler. In *The 12th International Conference on Learning Representations (ICLR)*. [Paper]
- Wilkins, G., Di, S., Calhoun, J., Li, Z., et al, 2024. FedSZ: Leveraging Floating-Point Lossy Compression for Federated Learning Communications. Submit to *IEEE International Conference on Distributed Computing Systems*.
- Li, Z., et al, 2023. Secure Federated Learning Across Heterogeneous Cloud and High-Performance Computing Resources - A Case Study on Federated Fine-tuning of LLaMA 2. Submit to *Computing in Science & Engineering*.
- Hoang, T.-H., Fuhrman, J., Madduri, R., Li, M., Chaturvedi, P., Li, Z., et al, 2023. Enabling End-to-End Secure Federated Learning in Biomedical Research on Heterogeneous Computing Environments with APPFLx. *arXiv preprint*. [Paper]
- Li, Z., et al, 2023. APPFLx: Providing Privacy-Preserving Cross-Silo Federated Learning as a Service. In *IEEE 19th International Conference on e-Science (e-Science)*. [Paper]
- Li, Z., Wang, X., Zhang, Z., Kindratenko, V., 2023. ViCTer: A Semi-Supervised Video Character Tracker. In *Machine Learning with Applications*. [Paper]
- Wu, Y., Miao, X., Li, Z., He, S., Yuan, X., Yin, J., 2023. An Efficient Generative Data Imputation Toolbox with Adversarial Learning. In *2023 IEEE 39th International Conference on Data Engineering (ICDE)*. [Paper]
- Yuan, X.*, Li, Z.*, Wang, G., 2022. Activematch: End-to-End Semi-Supervised Active Representation Learning. In *2022 IEEE International Conference on Image Processing (ICIP)*. (*: equal contributions) [Paper]