

Sixing Yu

+1 515.708.7088 | ✉ yusx@iastate.edu | 📍 Iowa State Univ., Ames, IA, US

EDUCATION

Beijing Technology and Business University

Aug. 2016 – Jun. 2020

BCS in Computer Science

Beijing, CHINA

- GPA: 92.3 / 100 (Ranked number 1 among 58 students)
- Award: Student Leadership Award (2016-2017); Outstanding Student Scholarship (2017, 2018, 2019)

Iowa State University

Aug. 2020 – 2025 (expected)

Dual MS-Ph.D. in Computer Science

Ames, IA

- GPA: 3.95 / 4
- Lab: Software Analytics and Pervasive Parallelism Lab
- Award:
 - 2022 Research Excellence Award
 - 2022 ISU Department of Computer Science Publication Award
 - 2021 ISU Department of Computer Science Publication Award

RECENT PUBLICATION

- Sixing Yu, Arya Mazaheri, Ali Jannesari: Auto Graph Encoder-Decoder for Neural Network Pruning. In Proc. of the International Conference on Computer Vision (ICCV), pages: 1-10, IEEE, October 2021. **(2021 ISU Department of Computer Science Publication Award)**
- Sixing Yu, Arya Mazaheri, Ali Jannesari: Topology-Aware Network Pruning using Multi-stage Graph Embedding and Reinforcement Learning. 39th International Conference on Machine Learning (ICML), Baltimore, Maryland, USA, pages 111, July 2022. **(Accept as Long Presentation, 2022 ISU Department of Computer Science Publication Award)**
- Sixing Yu, Phuong Nguyen, Waqwoya Abebe, Ali Anwar, Ali Jannesari: SPATL: Salient Parameter Aggregation and Transfer Learning for Heterogeneous Clients in Federated Learning. arXiv preprint arXiv: 2111.14345, pages 110, November 2021. **(Accepted by the International Conference for High Performance Computing, Networking, Storage, and Analysis (SC 2022))**
- Sixing Yu, Phuong Nguyen, Ali Anwar, Ali Jannesari: Adaptive Dynamic Pruning for Non-IID Federated Learning. arXiv preprint arXiv: 2106.06921, pages 17, June 2021.

SCHOLARLY REVIEWER

- Thirty-sixth Conference on Neural Information Processing Systems (NeurIPS 2022)

RESEARCH EXPERIENCE

Software Analytics and Pervasive Parallelism Lab

Aug. 2020 – Present

Iowa State University

Ames, IA

- Research on federated learning, model compression, neural architecture search, deep learning, and high-performance computing.
- Collaborating with IBM and research on efficient federated learning by applying machine learning methods and optimizing client selection algorithm
- Collaborating with Parallel Programming Lab of Technische Universität Darmstadt, working on Neural Architecture Search (NAS) and model compression
- Maintaining code base and docs for efficient job scheduling and federated learning.

PROJECTS

- Developed *GNN-RL* pipeline for efficient and scalable learning and inferences. Accelerating training and inference of deep neural networks (DNNs) using Graph Neural Networks (GNNs), Reinforcement Learning (RL), model compression, and optimization technique.
- Carried out research project on efficient federated learning and implemented GPU-based federated learning code repository.
- Implemented topology-aware model compression algorithm *code-base* for neural network pruning.
- Developed communication-efficiency federated learning *code-base* by salient parameter aggregation and transfer learning.
- Reproduced the dynamic pruning using PyTorch and applied to the federated learning field.
- Leveraged the Microsoft Azure Cloud Computing Platform API to implement a staff face sign-in Android app.
- Applied the Opencv (C++) and Microsoft Azure API to identify buildings from Google map street view pictures and marked the corresponding color of the buildings on the images.
- Software development, Use Unity 3D and C# to develop a navigation algorithm in a mobile game development project.

TEACHING EXPERIENCE

Teaching Assistant | *Computer Science, Iowa State University*

- Distributed Software Development | *Lab, Prof. Dr. Carl Chang* Aug. 2021 – Jan 2022
- Windows Application Programming | *Lab, Eshita Zaman* Jan 2022 – Present
- Introduction to Programming | *Seminar and Lab, Prof. Dr. Carl Chang* Aug. 2021 – Present

INTERNSHIP EXPERIENCE

Software developer | *Laboratory of Big Data Technology for Food Safety* | Beijing, CHN | Jun. 2019 – Sep. 2019

SKILLS

Languages : Python (proficiency in PyTorch), R language, C, C++, Java, Git, OpenMP