Xiyuan Yang

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EDUCATION

Wuhan University (WHU) **Wuhan, China**
Computer Science and Technology Outstanding Engineer Class, School of Computer Science September 2021- present

- **GPA:** 3.83/4.00, **Average score:** 89.9/100 **Current research area:** Federated Learning (FL)
- **Core courses:** *Higher Mathematics, Linear algebra, C Language Programming, Data Structure, Probability and Statistics, Discrete mathematics, Operating Systems, Database Systems, Principle of Computer Organization, Computer Architechture, Computer Networks*

RESEARCH EXPERIENCE

Bridging Inconsistency in Perosnalized Federated Learning (In Submission) **WHU, China**
Lead Author June 2023- November 2023

- The paper is currently in submission.

Dynamic Personalized Federated Learning with Adaptive Differential Privacy **WHU, China**
Lead Author November 2022- May 2023

- The paper has been accepted by **NeurIPS 2023**.
- We introduced the FedDPA algorithm, leveraging Dynamic Fisher Personalization and Adaptive Constraint to enhance model performance and robustness under Differential Privacy. I covered most of the workloads needed to conduct this work.

Robust Heterogeneous Federated Learning under Data Corruption **WHU, China**
The Third Author September 2022- November 2022

- The paper has been accepted by **ICCV 2023**.
- We proposed the AugHFL altorithm to address the data corruption issue in heterogeneous FL by data augmentation and weighted aggregation. In this work, I ran experiments on and wrote the Related Works section and Experiments section of the paper.

PROJECT EXPERIENCE

Wuhan Fannuo Software Technology Co., Ltd（Practical Training Course） **July 2023**

- Learned to use common software development techniques and version management tools.

Chatbot Design Based on LLaMA-33B **June 2023**

- Fine-tuned the pre-trained LLaMA model on an open-source Chinese corpus to improve its fluency in Chinese conversational contexts.
- Used QLoRA technology (including NF4 Quantization, LoRA, and Paged Optimizer) to greatly reduce Video Memory usage, enabling fine-tuning on a single 3090.
- Utilized vue.js for UI design to create a user-friendly interaction interface.
- Employed Djang in the back-end to build logic and databases, providing a stable and efficient request processing mechanism.

CPU Design for RISC-V Instruction Set (Course Project) **March 2023**

- Used Verilog language to design and implement a five-stage pipeline CPU, including IF/ID/EX/MEM/WB stages.
- Designed and implemented forwarding, stall, and related mechanisms to handle data hazards, ensuring correct execution within the pipeline.
- Implemented the decoding and execution of the RISC-V basic instruction set, including arithmetic, logic, load/store, branch, jump, and other instructions.

FiberHome Telecommunication Technologies Co., Ltd.（Practical Training Course） **July 2022**

- Learned basic techniques of network communication facilities and network programming.
- Conducted basic operation and maintenance of network servers.

LEADERSHIP ACTIVITY

Microsoft Student Club of Wuhan University, Vice Minister of the Technology Department **September 2022-present**

- Determined the content and schedule of regular Hackathon meetings, designed test questions for recruiting new members.

SKILLS

Languages: Chinese (native language), English (fluent, IELTS 7.0)
Technical: Proficient in Python, PyTorch and other related tools for deep learning and data analysis, Skilled in C/C++; Familiar with Java, JSP, and common front-end technologies, Haskell functional programming language, and MySQL database