JIAWEI LIU

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RESEARCH INTEREST

Creating high-quality software infrastructure: **high-performance** (System), **reliable** (SE), and **easy-to-use** (PL).

EDUCATION

Tongji University, Shanghai, China *Sept. 2017 - Jul. 2021*
B.Eng. in Computer Science

University of Illinois at Urbana-Champaign, IL, US *Aug. 2021 (expected)*
Ph.D. in Computer Science Advisor: Lingming Zhang

PROFESSIONAL EXPERIENCES

Research Assistant at PL/FM/SE Group, UIUC *Apr. 2021 - Present*
Advisors: *Prof.* Lingming Zhang Topic: *AI & SE*

Research Intern at DAMO Academy, Alibaba-Inc *Mar. 2021 - Aug. 2021*
Advised by: *Dr.* Yuanwei (Kevin) Fang, *Prof.* Yuan Xie Topic: *Scaling Data Systems*

Research Assistant at NYU Systems Group *Jul. 2020 - Mar. 2021*
Advisors: *Prof.* Jinyang Li Topic: *Video Systems*

Research Assistant at Hyperplane Lab, CFCS, Peking Univ. *Jan. 2020 - Aug. 2020*
Advisors: *Prof.* Hao Dong (Peking Univ.), *Prof.* Luo Mai (Univ. of Edinburgh) Topic: *Pose Estimation Systems*

Intern at AI Lab, ByteDance Inc. *Feb. 2020 - Jul. 2020*
Advised by: Guanzhe Huang, *Dr.* Chuanxiong Guo Topic: *Model Serving*

PUBLICATION

[OOPSLA'22] Coverage-Guided Tensor Compiler Fuzzing with Joint IR-Pass Mutation (Under Review)

- **Jiawei Liu**, Yuxiang Wei, Sen Yang, Yinlin Deng, Lingming Zhang. [code]

[ACM MM'22 OSC] Fast and Flexible Human Pose Estimation with HyperPose

- Yixiao Guo*, **Jiawei Liu***, Guo Li*, Luo Mai, Hao Dong. (to appear) [code] [paper]

NOTABLE ACHIEVEMENTS

Qidi Innovation Scholarship of Tongji University (Top *1%*)	*Oct.2020*
Selected Entrant for 2020 Google Machine Learning Winter Camp[†]	*Dec.2019*
Winner of International Data Science Hackathon (Chinese Region), Covestro[†] [news]	*Nov.2019*
National *2nd* Prize and Province-level *1st* Prize in RoboMaster, DJI Inc.	*Aug.2019*
National *3rd* Prize of Chinese Collegiate Computing Competition[†]	*Jul.2019*
Honorable Prize of COMAP's Mathematical Modeling Contest (MCM/ICM)[†]	*Feb.2019*
2nd Prize of Outstanding Student Scholarship, Tongji Univ.	*Nov.2018*
National *2nd* Prize (0.75~3.84%) and Province-level *1st* Prize of Chinese Modeling Contest[†]	*Nov.2018*

†: as the team leader.

OPEN-SOURCE CONTRIBUTIONS

Systems: HyperPose (1k stars), ThreadPools, JustRelaxFileSystem, TorchFlow (ML snapshot manager)

Computer Vision: MagicFilter (human matting), Action Recognition on DVS, Robot Armor Detector

Others: Bimulator (simulation, ray tracing, and OpenGL pipeline), Research Reading, Computer Science Notes

I also actively detect and fix bugs from systems like TensorFlow and TVM. Check my GitHub Profile for details.

SKILL STACK

Proficient in software optimization, C++-accelerated Python library, parallel programming, ML systems and ML.

Common: C++ (expert), Python, Go, Docker, Shell, Git, SQL, LaTeX, Grafana, LLVM, GDB, Valgrind

High-Perf. Computing: CUDA, C++ Thread Library, Protobuf, gRPC, Kafka, Protobuf, Thrift, OpenMP

Machine Learning Systems: PyTorch, TensorRT, TensorFlow, TVM, ONNX, OpenCV