Miss. Meng Zhang

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PROFILE

Research Interest: Systems for Machine Learning, Efficient Deep Learning System Optimization, Distributed GNN Training Optimization

Standard Test: **TOEFL**: 110 –R30+L27+S25+W28(31/10/2020); **GRE**: V161, Q170 , AW4.0 (01/11/2019)

Computer Software: VScode, PyCharm, Matlab, Latex

Math Courses: Machine Learning, Data Mining, Discrete Mathematics, Stochastic Processes

EDUCATION BACKGROUND

01/2022-now **Nanyang Technological University**, Singapore
- PhD candidate, with major in: Computer Science
- Research interests: Systems for Machine Learning

01/2021-01/2022 **National University of Singapore**, Singapore
- Master of Science, with major in: Electrical Computer Engineering
- GPA: **4.38**/5

09/2016-06/2020 **Zhejiang University**, Hangzhou City
- Bachelor's Degree, with major in: Information Engineering
- GPA: **3.66**/4

PUBLICATIONS

OSDI'23 Hydro: Surrogate-Based Hyperparameter Tuning Service in the Datacenter
Qinghao Hu, Zhisheng Ye*, **Meng Zhang***, Qiaoling Chen*, Peng Sun, Yonggang Wen, Tianwei Zhang

ASPLOS'23 Lucid: A Non-Intrusive, Scalable and Interpretable Scheduler for Deep Learning Training Jobs (**Distinguished Paper Award**)
Qinghao Hu*, **Meng Zhang***, Peng Sun, Yonggang Wen, Tianwei Zhang

Preprint Boosting Distributed Full-graph GNN Training with Asynchronous One-bit Communication
Meng Zhang, Qinghao Hu, Peng Sun, Yonggang Wen, Tianwei Zhang

(* = Equal Contribution)

PROFESSIONAL SERVICE

OSDI'23 USENIX Symposium on Operating Systems Design and Implementation,
Presenter & AE Committee Member

MLSys'23 Conference on Machine Learning and Systems,
AE Committee Member

EuroSys '23 EuroSys Conference,
Shadow Committee Member

INTERNSHIP EXPERIENCE

05/2023-now Research on Efficient GNN Training under system group, **Shanghai AI Lab**

10/2020-02/2021 Causal Graph-assisted Disease Prediction Using Electronic Health Records**, Tencent**
- The team worked on causal learning in disease prediction using electronic health records. We surveyed latest papers of EHR usage in disease prediction and found a lot of them are using outdated or complicated way to realize, especially considering causal factors in EHR, most papers used Bayesian Network or simple causal words extraction. Thus, the team tries to propose a novel disease prediction way combining causality and graph neural network.

11/2019-05/2020 Development of Field Moving Object Classification System**, Chinese Academy of Sciences-Shanghai Institute of Microsystems and Information Technology (SIMIT 上海中科院微系统所)**

- Project aims to extract the feature of target in videos, thus reaching the goal of target classification. It solves the problem from two sides—traditional feature extraction and deep learning. In the former method, project used improved gray-scale feature with image entropy, and optimized accuracy through Bagging and Boosting algorithm. The latter method focused on deep learning, using classical neural network such as CNN and ResNet, and achieve high classification accuracy up to 90%.

07/2019-09/2019 **Singapore University of Technology and Design (SUTD),** Singapore

- Summer research program. Conduct a Human Computer Interactive project under professor Simon's supervision.

04/02-22/02/2019 Winter Short Exchange program to **UC-Davis**

PREVIOUS RESEARCH & PRACTICAL PROJECTS

01/2021-11/2021 **Cooperative Multi-microgrids Energy Management and Optimization in RL,** Advanced Control Technology Lab, National University of Singapore(NUS);

- Currently I work on multi-microgrids power management and optimization problem using reinforcement learning(RL). I tried to develop a cooperative energy management system(EMS) in a distributed manner.

07/2019-09/2019 **HCI-Go with Me: Interactive Video Based Indoor Navigation System**, Summer research project at Singapore University of Technology and Design(SUTD);

- Most of the assistive technologies' usage like infrared, ultrasound and RF beacons require high equipment, installation and maintaining cost. The team created a video navigation system which shall help user find destinations which are unavailable via GPS, and people can watch the route video through wearable glasses thus to find the route;
- The team designed the navigation system by creating map network, combining checkpoints via histogram normalized correlation coefficient and image detection, and helping users find the shortest and custom routes;

02/2019-06/2019 **The "Magic Mirror" design by applying the multifunction of RaspberryPi**, Leader;

- The intention of project is to produce a mirror which integrates functions of showing time, date, weather, news and other information when people stand in front of it, and this mirror should have ability to have voice interaction with its owner;

12/07-23/07, 2018 Member, **Design a Taxi Meter by applying a AT89S51 Single Chip Microcomputer**;

- During the summer semester, our team self-learned the knowledge about singlechip and designed the taximeter by applied chips of S51 and AT24C02 etc.;
- Designed a multifunctional meter which can calculate fees according to different starting prices and variable unit prices, as well as the functions of zero clearing and waiting price counting;
- The software, Keil, Proteus, AD, has been used for code writing, hardware circuit design and simulation debugging during this project;