Qinghao Hu

S-Lab for Advanced Intelligence
Nanyang Technological University
ABN-02b-11, 61 Nanyang Avenue, Singapore 637335

E-Mail: qinghao.hu@ntu.edu.sg
Tel.: (+65) 8305 3277
Homepage: https://tonyhao.xyz

EDUCATION

Nanyang Technological University, Singapore *2020 ~ Now*
Ph.D. Student in Computer Science
Supervisor: Prof. Tianwei Zhang and Prof. Yonggang Wen

National University of Singapore, Singapore *2020*
Master in Electrical Engineering

Zhejiang University, China *2018*
Bachelor in Electrical Engineering

RESEARCH INTEREST

- Datacenter Scheduling and Resource Management
- Machine Learning for Systems
- Automated Deep Learning Systems

PUBLICATION

Hydro: Surrogate-Based Hyperparameter Tuning Service in Datacenters
Qinghao Hu, Zhisheng Ye*, Meng Zhang*, Qiaoling Chen*, Peng Sun, Yonggang Wen, Tianwei Zhang
[OSDI '23] *USENIX Symposium on Operating Systems Design and Implementation*

Lucid: A Non-Intrusive, Scalable and Interpretable Scheduler for Deep Learning Training Jobs
Qinghao Hu*, Meng Zhang*, Peng Sun, Yonggang Wen, Tianwei Zhang
[ASPLOS '23] *Architectural Support for Programming Languages and Operating Systems*
Distinguished Paper Award

Primo: Practical Learning-Augmented Systems with Interpretable Models
Qinghao Hu, Harsha Nori, Peng Sun, Yonggang Wen, Tianwei Zhang
[ATC '22] *USENIX Annual Technical Conference* (Accept Rate: 64/393=16.3%)

Characterization and Prediction of Deep Learning Workloads in Large-Scale GPU Datacenters
Qinghao Hu, Peng Sun, Shengen Yan, Yonggang Wen, Tianwei Zhang
[SC '21] *International Conference for High Performance Computing, Networking, Storage, and Analysis*

Deep Learning Workload Scheduling in GPU Datacenters: Taxonomy, Challenges and Vision
Wei Gao*, **Qinghao Hu***, Zhisheng Ye*, Peng Sun, et al.
[Preprint] *Submitted to ACM Computing Surveys*

Boosting Distributed Full-graph GNN Training with Asynchronous One-bit Communication
Meng Zhang, **Qinghao Hu**, Peng Sun, Yonggang Wen, Tianwei Zhang
[Preprint] *Submitted to a Conference*

(* *Equal Contribution*)

PROFESSIONAL SERVICE

[**EuroSys '23**] EuroSys Conference — Shadow Committee Member

[**OSDI '22**] USENIX Symposium on Operating Systems Design and Implementation — AE Committee Member

[**ATC '22**] USENIX Annual Technical Conference — AE Committee Member

[**EuroSys '22**] EuroSys Conference — AE Committee Member

[**SOSP '21**] ACM Symposium on Operating Systems Principles — AE Committee Member

WORK EXPERIENCE

Shanghai AI Laboratory, China — *Sep. 2022 - Mar. 2023*
Research Intern
Mentor: Dr. Peng Sun

INVITED TALK

Lucid: A Non-Intrusive, Scalable and Interpretable Scheduling System
Huawei, Beijing China — *May. 2023*
MLSys Seminar Singapore — *Apr. 2023*
ASPLOS, Vancouver Canada — *Mar. 2023*

Primo: Practical Learning Systems with Interpretable Models
ATC, Carlsbad California United States — *Jul. 2022*

Scheduling in Large-Scale GPU Datacenters
National University of Singapore — *Jan. 2022*

Characterization and Prediction of DL Workloads in Datacenters
SC, St. Louis Missouri United States — *Nov. 2021*

Cluster Scheduling for Deep Learning
S-Lab for Advanced Intelligence, Singapore — *Apr. 2021*

STUDENT MENTORED

I am fortunate to mentor and co-advise the research of the following students:

- **Ph.D. Students**: Meng Zhang, Yutong Wu
- **Master Students**: Qiaoling Chen, Tan Ru Phing (NUS)
- **Undergraduates**: Amrita Ravishanker

HONORS

Distinguished Paper Award of ASPLOS '23 — *2023*

Best Undergraduate Thesis Award — *2018*

Outstanding Graduates of Zhejiang University — *2018*