Jin Fang

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Education

University of Science and Technology of China (USTC), Anhui, China 2020.9-present

PhD student in Computer Science (GPA: 3.46/4.00)

Hunan University (HNU), Hunan, China 2016.9-2020.6

B.S. in Computer Science

Publications

1. ***J Fang**, G Zhao, H Xu* IEEE/ACM International Symposium on Quality of Service (**IWQoS**)
   GOAT: Gradient Scheduling with Collaborative In-Network Aggregation for Distributed Training

GRID: Gradient Routing with In-network Aggregation for Distributed Training 2023.2

***J Fang**, G Zhao, H Xu, C Wu, Z Yu* IEEE/ACM Transactions on Networking (**ToN**)

Experience

GOAT, Zhijiang Lab open project 2022.6-2022.9

Research Intern

GOAT performs gradient scheduling with collaborative in-network aggregation to efficiently aggregate asynchronously arriving gradients and speed up the distributed training

- Design a knapsack-based randomized rounding algorithm to perform gradient scheduling
- Implement GOAT with Pytorch and P4 (TNA) in a testbed containing 8 servers and 3 switches
- Reduce the communication overhead of distibuted training tasks by 81.2%

Alcor, Open sourced project 2020.9-2021.3

C++ Developer

Alcor leverages the latest SDN and container technologies as well as an advanced distributed system design to support the deployment, configuration, and scale-out of millions of VM and containers.

- Developing and end-to-end testing of the virtualization control plane (ACA)
- Add grpc thread for pulsar subscribe infomation (PR #274)

Reveal, Academic project 2021.2-2021.6

Reveal tries to improve the robustness of edge clouds by limiting No. of VNFs each user can access and No. of users each VNF can serve.

- Design a two-phase algorithm to solve the problem of VNF placement and request scheduling
- Implement Reveal with Python in a testbed containing 6 Nvidia Jetson Tx2s and 20 Raspberry Pis

Patents

A gradient scheduling method based on programmable switch under PS architecture 2021

*G Zhao, **J Fang**, H Xu, C Wu* Published: CN114900482A

A VNF placement method in the edge cloud 2021

*H Xu, **J Fang**, G Zhao, H Tu, H Wang* Published: CN113961324A

AWARDS

- Excellent price (25%) in Intel P4 China Hackthon 2022
- Doctoral first-class academic scholarship 2022
- Master's first-class study scholarship 2020, 2021