

Gerui Lv

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Research Interests

Video streaming, network protocol, data-driven optimization, and Internet measurements.

Education

Institute of Computing Technology, Chinese Academy of Sciences (ICT, CAS)

Beijing, China

Ph.D. in Computer System Architecture

Sep. 2016 – Jul. 2024

Advisors: Prof. Gaogang Xie and Prof. Zhenyu Li

Hunan University (HNU)

Changsha, China

B.S. in Computer Science and Technology

Sep. 2012 – Jul. 2016

Honors and Awards

National Scholarship for Doctoral Students in ICT, CAS

2023

Third Prize in Global AI Transmission Competition (AITrans) (4/138; 2nd in real-world evaluations)

2019

First Prize Scholarship in ICT, CAS

2019

Outstanding B.S. Graduates of Hunan

2016

National Scholarship for Undergraduates in Hunan University (Top 2%)

2015

Publications

[[MobiCom '24](#)] [Gerui Lv](#), Qinghua Wu, Yanmei Liu, Zhenyu Li, Qingyue Tan, Furong Yang, Wentao Chen, Yunfei Ma, Hongyu Guo, Ying Chen, Gaogang Xie. "*Chorus: Coordinating Mobile Multipath Scheduling and Adaptive Video Streaming*". In ACM MobiCom 2024.

[[TMC '23](#)] [Gerui Lv](#), Qinghua Wu, Qingyue Tan, Weiran Wang, Zhenyu Li, Gaogang Xie. "*Accurate Throughput Prediction for Improving QoE in Mobile Adaptive Streaming*". In IEEE Transactions on Mobile Computing, 2023.

[[INFOCOM '22](#)] [Gerui Lv](#), Qinghua Wu, Weiran Wang, Zhenyu Li, Gaogang Xie. "*Lumos: towards Better Video Streaming QoE through Accurate Throughput Prediction*". In IEEE INFOCOM 2022.

Patents

[Gerui Lv](#), Yanmei Liu, Wentao Chen, Furong Yang, Hongyu Guo, Ying Chen. "*Data transmission method, system, device, storage medium and program product*". CN115834556B, Chinese Patent. Granted: May 2023.

[Gerui Lv](#), Yanmei Liu, Furong Yang, Wentao Chen, Hongyu Guo, Ying Chen. "*Multi-path transmission re-injection control method, electronic equipment and storage medium*". CN116436865A, Chinese Patent. Published: Jul. 2023.

[Gerui Lv](#), Yanmei Liu, Wentao Chen, Furong Yang, Hongyu Guo, Ying Chen. "*Path processing method and device and electronic equipment*". CN116827853A, Chinese Patent. Published: Sep. 2023.

Experiences

Alibaba Internship *Research intern*

Jun. 2021 – Sep. 2022

↔ Network Technology Team, Taotian Group

Hangzhou, China

- Designed and implemented Chorus (MobiCom '24), a cross-layer framework that coordinates multipath transmission and adaptive streaming. Chorus improves QoE by 23.5% and 65.7% over Alibaba's XLINK (SIGCOMM '21) in emulated and real-world networks, respectively. Taobao's RPC system has applied Chorus's reinjection design.
- Participated in the code refactoring and open source of the multi-path version of [XQUIC](#), Alibaba's QUIC library.

Network Architecture and Protocols for 5G/B5G (National Key R&D Programm)

Dec. 2019 – Dec. 2022

- Led the optimization of QoE for adaptive streaming on mobile networks. Developed a video streaming measurement platform and collected a large [dataset](#) (2500+ sessions) in real-world mobile environments.
- Designed and implemented Lumos (INFOCOM '22, TMC '23), a data-driven throughput predictor for mobile adaptive streaming. Lumos assists existing ABR algorithms in improving QoE, outperforming Pensieve (SIGCOMM '17) by 19.2% in real-world networks.
- 13 related [tech blogs](#) were read 66k+ times. One of them was ranked [1st in Baidu search results](#) (Sep. 27, 2023).

AITrans Competition *Team leader*

Nov. 2018 – Jan. 2019

- Designed and implemented SOD (State Optimal Decision), which optimizes QoE for low-latency live streaming, by dynamically applying optimal parameters of the decision function under various network environments. In the final round, SOD won 2nd place in real-world scenarios on L3VTP (SIGCOMM '19 Poster) platform.