Yuke Ma

Ph.D. Student
Max Planck Institute for Informatics
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Education

•[Ph.D. Student] Max Planck Institute for Informatics *July 2025 - Present*
Network and Cloud Systems Group Saarbrücken, Germany

– Supervisor: Prof. Yiting Xia.
– Research Interests: Network System, Distributed System.

•[M.S.] Fudan University *Sept. 2022 - June 2025*
School of Computer Science Shanghai, China

– Supervisor: Prof. Yang Chen;
– Research Interests: Network Architectures, Protocols, Security, and Measurement

•[B.S.] Dalian University of Technology *Sept. 2015 - June 2020*
School of Computer Science and Technology Dalian, China

Employment

• TP-Link Corporation Pte. Ltd. *June 2020 - June 2022*
Consumer Electronics R&D Department Shenzhen, China

– Developed and maintained large software systems devices
– Devices: VIGI NVR 1008H, VIGI C400 series IP cameras
– Customized and ported the embedded Linux system to robotic SoC
– Built the software system platform for Tapo Robot Vacuum

Publications

[SenSys'24] Yuke Ma, Shihan Lin, Yang Chen, Jun Wu. Demo: CTSim: A Scalable and Flexible Cybertwin Network Simulator for Internet of Things Scenarios. ACM SenSys, November 2024.

[ICC'23] Tiancheng Guo, **Yuke Ma**, Mengying Zhou, Xin Wang, Jun Wu, Yang Chen. SocialCache: A Pervasive Social-Aware Caching Strategy for Self-Operated Content Delivery Networks of Online Social Networks. IEEE ICC, May 2023.

Projects

• Netowrk Simulator for Future Internet Architectures *Dec. 2022 - Present*
Repo: Github.com/myk12/CTSim, Github.com/myk12/FISim

– Designed a simulation platform suitable for future Internet architectures.
– Supports multipath transmission protocol, ID-aware routing, and zero-trust security model.
– Supports the simulation of Content-Centric Networking and Cybertwin Network.

• Social-aware CDN Cache Strategy *June 2022 - Sept. 2023*
Repo: Github.com/myk12/CDNTestbed, Github.com/skyerguo/SocialCache

– Designed a CDN cache replacement algorithm that considers user influence within social networks, specifically for a CDN platform serving online social networking sites.
– Implemented a cloud-based CDN testbed.
– Implemented a large-scale CDN simulation platform based on Python.

• High-precision TimeSync Protocol *June 2024 - Sept. 2024*
Repo (temporarily private): Github.com/myk12/TimeSYNC

– Compiled, deployed and tested the open-source high-performance 100Gbps FPGA NIC project corundum on the Xilinx Alveo U200 chip.
– Implemented a high-precision time synchronization protocol (Layer 2) between FPGA-based smart NICs on top of corundum.

• MPTCP-enabled Host Scanner *Sept. 2023 - Dec. 2023*
Repo: Github.com/myk12/mptcp_measurement

– Extended the zmap by implementing a module for discovering hosts that support the MP-TCP protocol.
– Conducted a scan of all hosts in the entire IPv4 address space and analyzed the results.

Awards

Outstanding Graduate of Fudan University, 2025

Academic Excellence Scholarship, First Class, Fudan University. (2023)

Graduate Freshman Scholarship, Fudan University. (2022)

Excellent Scholarship, Dalian University of Technology. (2019)

Skills

[Programming] Proficient: C/C++, Bash, Makefile, CMake, Git, Python. **Familiar**: Go, Java.

[Languages] Chinese (Native Speaker), English (Advanced), Japanese (Upper Intermediate)

[Others]: NS-3, IPFS, Zmap, FPGA.