Sen Lin

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Summary — Ph.D. (defended) in Computer Science at Northwestern University, specializing in *low-latency* and *cross-layer* optimization of *deployable* networking systems. Experienced in building real-time infrastructure with DPDK, eBPF, P4, and QUIC. Strong engineering background in protocol design and latency-sensitive optimization. Systems deployed across edge, serverless, and data center environments. Published in top-tier venues: ICNP, TOCS, EuroSys, SoCC, MobiCom.

Skills

Languages Rust, C/C++, Go, Python, P4, Ruby, Java
Systems Linux/Unix, Android
Infrastructure Docker, Kubernetes, OpenFaaS, AWS/Azure
Networking QUIC, Linux Kernel Networking, Netfilter, eBPF, DPDK, Tofino, WebRTC
Dev Tools PyTorch, Ruby on Rails, LaTeX, Database

Education

Northwestern University, Evanston, IL — 2020 – Dec 2025 (expected)
Ph.D. *in Computer Science, GPA:* **3.96/4.0**
Areas: Computer Networks and Systems; Advisor: Prof. Aleksandar Kuzmanovic
Committee: Prof. Aleksandar Kuzmanovic, Prof. Peter A. Dinda, Prof. Yan Chen, Prof. Tom Barbette
Thesis: Cross-Layer Network Optimization Targeting Endusers
Additional Coursework: Intellectual Capital Management (MBA Level), Kellogg School of Management

University at Buffalo, Buffalo, NY — 2018 – 2020
M.Sc. *in Computer Science & Engineering, GPA:* **3.89/4.0**
Advisor: Prof. Lu Su

Yunnan University, Kunming, China — 2014 – 2018
B.Eng. *in Software Engineering, GPA:* **3.4/4.0**
Advisor: Prof. Yun Yang

Experience

Dolby Laboratories — 2024
PhD Research Intern, Manager: Dr. Jason Cloud
- Led an independent real-time video streaming project combining video coding and network coding

Northwestern University — 2020 – Present
Research Assistant, Advisor: Prof. Aleksandar Kuzmanovic

Virtual Multipath Transport (Under development)
- Designed an MPTCP-compatible multipath transport protocol that eliminates multi-homing requirement (eBPF, tc, XDP)

Leveraging Cross-Directional Dependency in Realtime Interactive Streaming [C1]
- Extended QUIC's multiplexing and priority control to fit emerging streaming demands (Rust, quinn, WebRTC, VR)
- Achieved up to 9.4x reduction in motion-to-photon latency and 82x reduction in freeze frame rates.

Optimizing Traffic in Public-Facing Data Centers Amid Internet Protocols [C2, P1]
- Designed an in-protocol optimization signaling for client-transparent data center traffic control
- Developed SRPT flow scheduling and predictive load balancing on high-speed DCN stack (P4/Tofino, DPDK, Netfilter)
- Achieved up to 20x FCT reduction from end-to-end testbed with DCN workloads

Streaming Analytics at the Network Edge [C3, J1]
- Re-architected data flow for streaming analytics using semantic cookies and edge processing
- Demonstrated up to 200× performance gain in privacy-enhanced user analytics (P4/Tofino, dVPN)

Accelerating and Securing Serverless Cloud Networks with QUIC [C4, P2, Code]
- Integrated QUIC into serverless computing platform (OpenFaaS, Kubernetes, quic-go)
- Achieved 8–40% latency reductions across single and chained serverless functions in real-world applications

University at Buffalo — 2018 – 2020
Graduate Student, Advisor: Prof. Lu Su

3D Human Pose Construction Using WiFi [C5, Demo video]
- Developed an RNN model to construct 3D human postures from WiFi signals, achieving a 35% improvement in accuracy

Yunnan University Open Source Association — 2017 – 2020
Co-founder & Core member

– @YNUOSA is one of the largest local open-source organizations, where I led various projects, including the CI/CD services and PaaS services, and hosted public technical workshops.

Yunnan University 2017
Software Engineer (Work-Study)
– Developed the next-generation information systems for Yunnan University jointly with industrial partners

Chinese Academy of Science, Institute of Software 2016
Research Intern, Advisor: Prof. Xue Chen

Publications

Conference Papers

C1 **Sen Lin**, Andre Chen, Kevin Zhikai Chen, Aleksandar Kuzmanovic
Leveraging Cross-Directional Dependency in Realtime Interactive Streaming
To appear in the 7th ACM International Conference on Multimedia in Asia, Kuala Lumpur, Malaysia, December 2025 **(MMAsia'25)**

C2 **Sen Lin**, Jianfeng Wang, Aleksandar Kuzmanovic
Optimizing Traffic in Public-Facing Data Centers Amid Internet Protocols
In the 32nd IEEE International Conference on Network Protocols, Charleroi, Belgium, October 2024 **(ICNP'24)**

C3 Yunming Xiao, Yibo Zhao, **Sen Lin**, Aleksandar Kuzmanovic
Snatch: Online Streaming Analytics at the Network Edge
In the 19th European Conference on Computer Systems, Athens, Greece, April 2024 **(EuroSys'24)**

C4 Kaiyu Hou, **Sen Lin**, Yan Chen, Vinod Yegneswaran
QFaaS: Accelerating and Securing Serverless Cloud Networks with QUIC
In the 13th ACM Symposium on Cloud Computing, San Francisco, CA, November 2022 **(SoCC'22)**

C5 Wenjun Jiang, Hongfei Xue, Chenglin Miao, Shiyang Wang, **Sen Lin**, Chong Tian, Srinivasan Murali, Haochen Hu, Zhi Sun, Lu Su
Towards 3D Human Pose Construction Using WiFi
In the 26th ACM International Conference on Mobile Computing and Networking, London, UK (Virtual), September 2020 **(MobiCom'20)**

Journal Papers

J1 Yunming Xiao, Yanqi Gu, Yibo Zhao, **Sen Lin**, Aleksandar Kuzmanovic
Enabling Anonymous Online Streaming Analytics at the Network Edge
To appear in ACM Transactions on Computer Systems (accepted June 2025) **(TOCS)**

Posters

P1 **Sen Lin**, Jianfeng Wang, Aleksandar Kuzmanovic
Optimizing Traffic in Public-Facing Data Centers Amid Internet Protocols
In the 21st USENIX Symposium on Networked Systems Design and Implementation, Santa Clara, CA, 2024 **(NSDI'24)**

P2 Kaiyu Hou, **Sen Lin**, Yan Chen, Vinod Yegneswaran
Accelerating and Securing Serverless Cloud Networks with QUIC
In the 17th International Conference on Emerging Networking EXperiments and Technologies, Munich, Germany (Virtual), 2021 **(CoNEXT'21)**

Honors & Awards

– ***Student Travel Grant*** Oct 2025
ACM SIGMM
– ***Elected Attendee*** Apr 2025
CRA-WP Grad Cohort for IDEALS
– ***Student Travel Grant*** Sep 2024
IEEE International Conference on Network Protocols (ICNP'24)
– ***Best Student Paper Award*** Apr 2024
European Conference on Computer Systems (EuroSys'24)
– ***Conference Travel Grants*** 2021 – 2024
Northwestern University
– ***Peter and Adrienne Barris Outstanding Teaching Assistant Award*** May 2023
Northwestern University

Service & Teaching

– **Reviewer/Sub-reviewer**: WWW ('21, '22, '23); ICDCS ('22)
– **Teaching Assistant/Peer Mentor**: CS 340 Introduction to Computer Networking (4x, 400+ students, outstanding TA); CS 497 Selected Topics in Computer Networks (Mentored 10+ research students, including 4 long-term mentees)