APNet 2025
SHANG HAI

APNet 2025

THE 9TH ASIA-PACIFIC WORKSHOP ON NETWORKING

Conference Manual

Shanghai, China

August 7-8, 2025

Content

Introduction

The 9th Asia-Pacific Workshop on Networking (APNET'25) will take place August 7-8, 2025, at Shanghai, China. APNet aims to bring together the very best researchers in computer networking and systems across the Asia-Pacific region and around the globe to a live forum discussing innovative ideas at their early stages. The mission of APNet is that promising but not-yet-mature ideas can receive timely feedback from the community and experienced researchers, leading them into publications at major conferences such as SIGCOMM, NSDI, SOSP, OSDI, MobiCom, and CoNEXT.

Dates：August 7-8, 2025

Venue：Crowne Plaza Shanghai Fudan Hotel

Registration fee：ACM Member：$600、Non-member：$650、

Student Member：$400、Student Non-member：$450

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Technical Program

Session Time

Keynote Talk	50 mins total
Regular Paper	10 mins talk + 3 mins Q&A (13 mins total)
Academic Insight Talk	30 mins total
Industry Spotlight Talk	30 mins total

August 7, 2025 (Day 1)

Crown Grand Ballroom（the Second Floor）

Time	Event
8:30 - 8:45 am	**Opening Remarks** General/PC Chairs
8:45 - 9:35 am	**Keynote 1: From Prediction to Proof: Rethinking AI for Systems and Networks** Prof. Matthew Caesar (UIUC, ACM SIGCOMM Chair)
9:35 - 10:30 am	**Session: Reinventing RDMA** Session Chair: Chen Tian
	Exposing RDMA NIC Resources for Software-Defined Scheduling *Yibo Huang (University of Michigan); Yiming Qiu (University of Michigan / UC Berkeley); Yunming Xiao, Archit Bhatnagar (University of Michigan); Sylvia Ratnasamy (UC Berkeley); Ang Chen (University of Michigan)*
	Cache-Aware I/O Rate Control for RDMA *Qijing Li, Xinyang Huang, Bowen Liu, Pengbo Li, Junxue Zhang, Kai Chen*

	(Hong Kong University of Science and Technology)
	Orderly Management of Packets in RDMA by Eunomia *Sana Mahmood, Jinqi Lu, Soudeh Ghorbani (Johns Hopkins University)*
	UCM: Fast and Maintainable User-space RDMA Connection Setup *Huijun Shen (Hunan University); Jian Yang, Zelong Yue (ByteDance Inc.); Xingyu Guo, Xijin Yin (Hunan University); Lang An, Yulin Chen, Jie Ding, Hongyu Wu, Yong Zhang, Jianxi Ye (ByteDance Inc.); Guo Chen (Hunan University)*
10:30 - 11:00 am	**Coffee Break**
11:00 - 11:55 am	**Session: Load, Balance, Repeat** Session Chair: Henry Xu
	Maat: A Fair Layer-4 Load Balancer With Per-Connection Consistency *Ju Huang, Lu Tang (Xiamen University)*
	Remote TCP Connection Offload with XO *Shuo Li, Steven Chien, Tianyi Gao, Michio Honda (University of Edinburgh)*
	SRC: A Scalable Reliable Connection for RDMA with Decoupled QPs and Connections *Yiren Zhao, Ran Shu, Yongqiang Xiong (Microsoft Research)*
	Enabling Packet Spraying over Commodity RNICs with In-Network Support *Xiangzhou Liu, Wenxue Li, Kai Chen (Hong Kong University of Science and Technology)*
11:55 am - 1:15 pm	**Lunch**
1:15 - 2:10 pm	**Session: Smarter Control, Better Flow** Session Chair: Alessandro Cornacchia
	Congestion Control for AI Workloads with Message-Level Signaling *Yuxuan Li, Zhenghang Ren, Wenxue Li, Xiangzhou Liu, Kai Chen (Hong Kong University of Science and Technology)*
	Collaborative Multi-Flow Congestion Control via Deep Reinforcement Learning *Qiangqiang Wei, Jiangping Han, Kaiping Xue, Jinhao Liu (University of*

	Science and Technology of China); Naiqiang qiao, Hao Chen (HUAWEI TECHNOLOGIES CO., LTD.)
	ORC: Online Reinforcement Learning for Congestion Control with Fast Convergence *Yijun Li, Jiawei Huang, Chuliang Wu (Central South university); Xiaojun Zhu, Jianxin Wang (Central South University)*
	Hybrid Congestion Control with Variable Monitoring Time Period *Xiaohong Qiu, Haifeng Liu (Jiangxi University of Science and Technology); Shuangmei Liu (Nanchang Hangkong University); Zhen Li, Xiaojun Zhu (Jiangxi University of Science and Technology)*
2:10 - 3:05 pm	**Session: Networks in the Wild** Session Chair: Shuai Wang
	Assessing the Impact of ISP de-peering: A case study of Cogent's Disconnection from Russian Networks in Routing Perspective *Liming Liu (Tsinghua University, Zhongguancun Laboratory); Yuanyuan Zhang, Kun Guo, Meijia Hou (Zhongguancun Laboratory); Mingwei Xu (Tsinghua University, Zhongguancun Laboratory); Jiahao Cao (Tsinghua University); Xin Gao, Jiang Li, Yonghong Fu (Zhongguancun Laboratory)*
	Topology-Adaptive LEO Satellite Network Telemetry via Graph Isomorphism and Topology Partitioning *Yan Zhang (Purple Mountain Laboratories); Tian Pan (Beijing University of Posts and Telecommunications); Yan Zheng (Purple Mountain Laboratories); Guohao Ruan, Haonan Li (Beijing University of Posts and Telecommunications); Yi Liu (SICE, Beijing University of Posts and Telecommunications); Jiang Liu, Tao Huang (Beijing University of Posts and Telecommunications)*
	CTSVN: A Solution for Computation Task Scheduling in Vehicle Networking *Zheng Fang, Kun Xie, Xiaohong Huang, Pei Zhang, Dandan Li (BUPT)*
	Understanding the Long Tail Latency of TCP in Large-Scale Cloud Networks *Zihao Fan (Shanghai Jiao Tong University and Alibaba Cloud); Enge Song (Alibaba Cloud); Bo Jiang (Shanghai Jiao Tong University); Yang Song, Yuke Hong, Bowen Yang, Yilong Lv, Yinian Zhou, Junnan Cai, Chao*

	Wang, Yi Wang, Yehao Feng, Dian Fan, Ye Yang, Shize Zhang, Xiaoqing Sun, Jianyuan Lu (Alibaba Cloud); Xing Li (Zhejiang University and Alibaba Cloud); Jun Liang (Alibaba Cloud); Biao Lyu (Zhejiang University and Alibaba Cloud); Zhigang Zong (Alibaba Cloud); Shunmin Zhu (Hangzhou Feitian Cloud and Alibaba Cloud)
3:05 - 4:00 pm	**Poster Session + Coffee Break**
4:00 - 6:00 pm	**Academic Insight Talks** Session Chair: Kai Chen
	Making Serverless Computing Efficient and Scalable *Prof. K. K. Ramakrishnan (Distinguished Professor, University of California, Riverside)*
	Congestion Management in/beyond Datacenter Networks: Pyrrha as a case *Prof. Chen Tian (Professor, Nanjing University)*
	What does sparsity mean for machine learning systems? *Prof. Hong Xu (Associate Professor, The Chinese University of Hong Kong)*
	On the Design of High Performance Routing Protocols in AI Clusters *Prof. Shizhen Zhao (Associate Professor, Shanghai Jiao Tong University)*
6:00 - 6:15 pm	**Break**
6:15 - 9:30 pm	**APNet' 25 Banquet**
	At 6:15 pm, depart from Crowne Plaza Hotel to Peace Hotel by shuttle bus; enjoy the banquet at Peace Hotel from 7:00 to 9:30 pm; and return to Crowne Plaza Hotel by shuttle bus at 9:30 pm.

August 8, 2025 (Day 2)

Crown Grand Ballroom（the Second Floor）

Time	Event
8:30 - 9:20 am	**Keynote 2: Democratizing Deep Learning Training: Towards Training LLMs using Consumer-grade GPUs** Prof. Dongsu Han (KAIST)
9:20 - 10:00 am	**Session: Simulators for the AI Age** Session Chair: Kaihui Gao
	Miniature: Fast AI Supercomputer Networks Simulation on FPGAs *Yicheng Qian (Northeastern University/Microsoft Research); Ran Shu, Rui Ma, Yang Wang (Microsoft Research); Derek Chiou (UT Austin/Microsoft); Nadeen Gebara, Luca Piccolboni (Microsoft); Miriam Leeser (Northeastern University); Yongqiang Xiong (Microsoft Research)*
	Nüwa: Efficient Generative Control Plane for AI Network Simulation *Wenkai Li (Xi'an Jiaotong University); Ran Shu (Microsoft Research); Peng Zhang (Xi'an Jiaotong University); Yongqiang Xiong (Microsoft Research)*
	SplitNN: Single-Machine Network Emulation at Scale with Minute-Level Construction of 10K-Node Virtual Networks *Kaifei Peng, Yanbiao Li, Wenbin Li, Xian Yu, Gaogang Xie (Computer Network Information Center, Chinese Academy of Sciences; University of Chinese Academy of Sciences)*
10:00 - 10:40 am	**Session: Redefining the Network Stack** Session Chair: Yunming Xiao
	OmniDMA: Scalable RDMA Transport over WAN *Kai Lv (Institute of Computing Technology, Chinese Academy of Sciences; University of Chinese Academy of Sciences; Huawei); Jinyang Li (Huawei); Pengyi Zhang (Institute of Computing*

	Technology, Chinese Academy of Sciences; University of Chinese Academy of Sciences); Heng Pan (Computer Network Information Center, Chinese Academy of Sciences); Luyang Li (Institute of Computing Technology, Chinese Academy of Sciences; University of Chinese Academy of Sciences); Shuihai Hu (Huawei); Zhenyu Li (Institute of Computing Technology, Chinese Academy of Sciences; University of Chinese Academy of Sciences.); Gaogang Xie (Computer Network Information Center, Chinese Academy of Sciences; University of Chinese Academy of Sciences); Jingbin Zhou, Kun Tan (Huawei)
	Designing Transport-Level Encryption for Datacenter Networks *Tianyi Gao, Xinshu Ma, Suhas Narreddy, Eugenio Luo, Steven Chien, Michio Honda (University of Edinburgh)*
	Enhancing Network Traffic Prediction by Integrating Graph Transformer with a Temporal Model *Xiucheng Sun, Runqun Xiong, Dian Shen (Southeast University); Junzhou Luo (Southeast University, Nanjing, P.R. China)*
10:40 - 11:10 am	**Coffee Break**
11:10 am - 12:05 pm	**Session: Efficient AI at the Edge and Core** Session Chair: Li Chen
	Mnemosyne: Lightweight and Fast Error Recovery for LLM Training in a Just-In-Time Manner *Jinyi Xia, Menghao Zhang, Jiaxun Huang, Yuezheng Liu (Beihang University); Xiaohe Hu (Infrawaves); Xudong Liu, Chunming Hu (Beihang University)*
	Rethinking Dynamic Networks and Heterogeneous Computing in Automatic Parallelization *Ruilong Wu, Xinjiao Li, Yisu Wang, Xinyu Chen, Dirk Kutscher (The Hong Kong University of Science and Technology (Guangzhou))*
	FlexSpark: Robust and Efficient Multi-Device Collaborative Inference over Wireless Network *Yiyang Shao, Hongyi Li, Shuihai Hu, Xinle Du, Hao Wu, Jingbin Zhou, Kun Tan (Huawei)*

	PromptMobile: Efficient Promptus for Low Bandwidth Mobile Video Streaming *Liming Liu, Jiangkai Wu, Haoyang Wang, Peiheng Wang, Zongming Guo, Xinggong Zhang (Peking University)*
12:05 - 1:25 pm	**Lunch**
1:25 - 2:20 pm	**Session: Programmability and Performance** Session Chair: Jiaqi Gao
	Augmenting Public Cloud Infrastructure for Heterogeneous Network Function Virtualization *Haonan Li, Yang Song, Tian Pan, Zhigang Zong, Bengbeng Xue, Xionglie Wei, Yisong Qiao, Donglin Lai, Baohai Hu, Jin Ke, Enge Song, Yuxiang Lin, Xiaomin Wu, Jianyuan Lu (Alibaba Cloud); Xing Li, Biao Lyu (Zhejiang University and Alibaba Cloud); Rong Wen (Alibaba Cloud); Jiao Zhang, Tao Huang (Purple Mountain Laboratories); Shunmin Zhu (Hangzhou Feitian Cloud and Alibaba Cloud)*
	Cost-Efficient and Reliable SFC Orchestration in Mobile Edge Computing *Yuanfei Xiao, Zhenli He, Qixin Peng (Yunnan University)*
	Toward Scalable Learning-Based Optical Restoration *Siyong Huang (Xiamen University); Qingyu Song (The Chinese University of Hong Kong); Kexin Yu (Xiamen University); Zhaoning Wang (China Unicom); Zhizhen Zhong (Massachusetts Institute of Technology); Qiao Xiang, Jiwu Shu (Xiamen University)*
	Unmasking Vulnerabilities of HyperLogLog: Security via Parameter Extraction *Shishi Zhang, Ning Wang, Lu Tang (Xiamen University)*
2:20 - 3:15 pm	**Session: Resilient Systems, Secure Designs** Session Chair: Qiao Xiang
	FauTE: Fault-tolerant Traffic Engineering in Data Center Network *Xiyuan Liu (Nanyang Technological University); Yang Liu (Shanghai Institute of Satellite Engineering); Jingyi Cheng, Ximeng Liu, Shizhen Zhao (Shanghai Jiao Tong University)*

	A Theoretical Framework for Quantitative Evaluation of Padding Defenses against Website Fingerprinting *Yue Gu (Tsinghua University/Tsinghua Shenzhen International Graduate School); Hao Wu (CNCERT/CC); Dan Li (Tsinghua University)*
	H-NRF: A High-performance and Evolutive NRF Framework for Large-scale Mobile Core Network *Zhuoran Ma (Hunan University; CNIC CAS); Yanbiao Li (CNIC CAS; UCAS, China); Xin Wang (SUNY Stony Brook); Xian Yu, Xinyi Zhang, Shiyi Liu (CNIC CAS; UCAS China); Kun Xie (Hunan university); Gaogang Xie (CNIC CAS; UCAS, China)*
	Cloud Overbooking Optimization: Reducing Temporal Volatility through Spatial Workload Aggregation *Baoqing Wang, Long Li, Jing Yang, Jiawei Liu, Gongming Zhao, Hongli Xu (University of Science and Technology of China)*
3:15 - 3:45 pm	**Coffee Break**
3:45 - 5:45 pm	**Industry Spotlight Talks** Session Chair: Kun Tan
	Expressways: Unlocking the Full Potential of AI With Next-Gen Networking *Dr. Gil Bloch (Senior Principal Architect at NVIDIA)*
	Compute Scaling for AI *Dr. Fan Yang (Senior Principal Research Manager at MSR-Asia)*
	TBA *Dr. Binyang Liu (Director of Network Technology Lab, Huawei Central Research Institute)*
	Luoshen: A Large Scale High Performance Cloud Network for Public Cloud *Dr. Shunmin Zhu (Head of Cloud Network Division at Alibaba Cloud)*
5:45 - 6:25 pm	**Panel Discussion: Joint Academia & Industry**
6:25 - 6:30 pm	**Concluding Remarks** General/PC Chairs

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