



JUNXIAO WANG

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INTRODUCTION

I'm currently a postdoc fellow at the Department of Computing (COMP) at The Hong Kong Polytechnic University, working with Prof. Song Guo (CAE Fellow, IEEE Fellow and the director of the PolyU Edge Intelligence Laboratory). My research interests fall into distributed networking systems (software defined networking and virtualized network functions) and machine learning's privacy protection (federated learning).

EXPERIENCE

HK Polytechnic University	2021–NOW	Postdoctoral Fellow
	Department of Computing (COMP)	Project: Federated Learning over Mobile Edge Networks, aiming at machine learning governance and privacy-preserving deep learning frameworks. PolyU Edge Intelligence Laboratory directed by Prof. Song Guo
Queen Mary University, London	2018–2019	Visiting Researcher
	School of Electronic Engineering and Computer Science (EECS)	Project: Network Enhancement with Software Defined Networking and Network Function Virtualization, developing novel and efficient architectures, algorithms and systems to guarantee datacenter in-network's performance. Networks Research Group directed by Prof. Steve Uhlig

EDUCATION

Dalian University of Technology	2016–2020	PhD, Computer Technology Application
	College of Computer Science and Technology	Thesis: Research on Techniques of Performance Guarantee for Software Defined Network Function Virtualization System Advisor: Prof. Kequi Li
Dalian University of Technology	2014–2017	MEng, Computer Systems Organization
	College of Computer Science and Technology	Thesis: Research on Request Dispatching for Multi-Controllers in Software-Defined Networking Advisor: Prof. Kequi Li
Dalian Maritime University	2010–2014	BE, Software Engineering
	College of Information Science and Technology	Graduating With Honors and Exam-exempted Postgraduate

ACADEMIC ACTIVITIES AND TEACHING

2014.9–NOW	Review for INFOCOM, CVPR, JSAC, TNET, CSUR, IoTJ, TNSM, etc.
2021.1–2024.12	国家自然科学基金委员会, 面上项目, 62072069, 学习驱动及知识定义的网络流量分类关键技术的研究, 参与.
2018–2020	Master theses shepherd in Dalian University of Technology.
2020.10	PC Member for IEEE ICPADS Workshop on NCDM.
2014–2017	Undergraduate and postgraduate national science competition shepherd in Dalian University of Technology.

2019.12 Session Chair for IEEE ICPADS.
 2018.1-2021.12 国家自然科学基金委员会, 面上项目, 61772112, 面向可视媒体大数据处理的计算网络协同调度关键技术的研究, 参与.

PUBLICATIONS

- Preprint Papers Tao Guo, Song Guo, Jiewei Zhang, Wenchao Xu, **Junxiao Wang**. "Vertical Machine Unlearning: Selectively Removing Sensitive Information From Latent Feature Space". arXiv:2202.13295, 2022.
- Conference Papers **Junxiao Wang**, Song Guo, Xin Xie, Heng Qi. "Federated Unlearning via Class-Discriminative Pruning". ACM The Web Conference (WWW) 2022. (CCF-A)
- Junxiao Wang**, Song Guo, Xin Xie, Heng Qi. "Protect Privacy from Gradient Leakage Attack in Federated Learning". IEEE International Conference on Computer Communications (INFOCOM) 2022. (CCF-A)
- Junxiao Wang**, Yuchen Huang, Heng Qi, Keqiu Li, Steve Uhlig. "CLICK-UP: Towards Software Upgrades of Click-driven Stateful Network Element". ACM SIGCOMM Conference 2018, Demo track. (CCF-A, short paper)
- Keyan Zhao, **Junxiao Wang**, Heng Qi, Xin Xie, Keqiu Li. "HBL-Sketch: A New Three-tier Sketch for Accurate Network Measurement". International Conference on Algorithms and Architectures for Parallel Processing 2019. (CCF-C)
- Wanqian Zhang, **Junxiao Wang**, Sheng Chen, Heng Qi, Keqiu Li. "A Framework for Resource-aware Online Traffic Classification Using CNN". International Conference on Future Internet Technologies 2019.
- Wenrui Zhou, Yuan Cao, Heng Qi, **Junxiao Wang**. "An Effective Network Intrusion Detection Framework Based on Learning to Hash". IEEE International Conference on Smart Internet of Things 2019. (CCF-C)
- Journal Papers **Junxiao Wang**, Heng Qi, Keqiu Li, Xiaobo Zhou. "PRSFC-IoT: A Performance and Resource Aware Orchestration System of Service Function Chaining for Internet of Things". IEEE Internet of Things Journal. (JCR-Q1, 中科院一区, IF=9.471)
- Junxiao Wang**, Heng Qi, Yang He, Wenxin Li, Keqiu Li. "FlowTracer: An Effective Flow Trajectory Detection Solution Based on Probabilistic Packet Tagging in SDN-Enabled Networks". IEEE Transactions on Network and Service Management. (CCF-C, JCR-Q1, IF=4.195)
- Junxiao Wang**, Heng Qi, Wenxin Li, Keqiu Li, Steve Uhlig, Yuxin Wang. "Dynamic SDN Control Plane Request Assignment in NFV Datacenters". IEEE Transactions on Network Science and Engineering. (JCR-Q1, IF=3.894)
- Junxiao Wang**, Heng Qi, Keqiu Li, Steve Uhlig. "Click-UP: Towards the Software Upgrade of Click based Modular Network Function". IEEE Systems Journal. (JCR-Q1, IF=3.931)
- 王军晓, 齐恒, 李克秋, 周晓波. "面向数据中心网络的链路故障实时检测即服务". 计算机研究与发展.
- Heng Qi, **Junxiao Wang**, Wenxin Li, Yuxin Wang, Tie Qiu. "A Blockchain-driven IIoT Traffic Classification Service for Edge Computing". IEEE Internet of Things Journal. (JCR-Q1, 中科院一区, IF=9.471)
- Xinping Xu, Wenxin Li, Heng Qi, **Junxiao Wang**, Keqiu Li. "Latency-Constrained Cost-Minimized Request Allocation for Geo-distributed Cloud Services". IEEE Open Journal of the Communications Society.

HONORS AND AWARDS

- 2020.12 The Hong Kong Polytechnic University Postdoc Matching Fund.
 2018.6 Joint PhD Scholarship by the China Scholarship Council.

- 2015.12 Outstanding Graduate of Dalian University of Technology.
 2015.8 Final First Prize and Best Creative Award in National University SDN Network Application Innovation Competition.

GRANTED PATENTS

- 李克秋, 王军晓, 齐恒, 喻海生. 一种SDN体系架构中协调层的构建方法, 2019-7-16, 中国, CN201710030607.8
 李克秋, 雷创, 齐恒, 王军晓. 一种基于虚拟化技术的虚拟数据中心资源提供方法, 2020-1-17, 中国, CN201710230445.2
 李克秋, 李书煜, 齐恒, 王军晓. 一种基于Cairngorm框架的虚拟数据中心可视化方法, 2019-12-27, 中国, CN201710225860.9
 李克秋, 张志千, 齐恒, 王军晓. 一种基于OpenFlow协议的SDN控制器应用性能分析方法, 2021-3-26, 中国, CN201810375977.X
 齐恒, 乔佳彬, 李克秋, 王军晓. 一种面向混部云的服务性能测试方法, 2021-3-26, 中国, CN201810375893.6
 李克秋, 赵佶, 齐恒, 王军晓. 一种提供边缘计算服务的网关设备建立方法, 2020-4-28, 中国, CN201810419285.0
 李克秋, 黄宇晨, 齐恒, 王军晓. 一种基于Click的虚拟网元在线编排方法, 2020-9-25, 中国, CN201810255339.4
 齐恒, 周文蕊, 曹媛, 李克秋, 王军晓. 一种基于自动编码器网络的异常流量检测方法, 2020-5-19, 中国, CN201910094284.8
 齐恒, 赵柯妍, 李克秋, 王军晓. 一种基于三层Sketch架构的大象流检测方法, 2021-11-19, 中国, CN201910067412.X
 张婉茜, 齐恒, 李克秋, 王军晓. 一种具有计算资源自适应性的异常流量检测方法, 2021-2-12, 中国, CN201910067413.4

TALKS

- 2022.5 Protect Privacy from Gradient Leakage Attack in Federated Learning, Conference Talk, 2022 IEEE International Conference on Computer Communications, Online.
 2022.4 Federated Unlearning via Class-Discriminative Pruning, Conference Talk, 2022 ACM The Web Conference, Online.
 2022.3 Privacy Protection in Federated Learning, Invited Talk, Ritsumeikan University & CCF Dalian International Academic Seminar, Online.
 2018.8 CLICK-UP: Towards Software Upgrades of Click-driven Stateful Network Elements, Demonstration Talk, 2018 Annual Conference of the ACM Special Interest Group on Data Communication, Budapest, Hungary.
 2015.8 Centrally Coordinated Replica Selection Architecture in Multi-controller SDN, Demonstration Talk, The 2nd National University SDN Network Application Innovation Competition, South China University of Technology, GuangZhou.

REFEREES

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