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POSITION

Professor, School of Information Science and Technology,
University of Science and Technology of China

RESEARCH INTERESTS

Optical networks, Software-defined networking, Knowledge-defined networking,
Network function virtualization, Datacenter networks.

EDUCATION

University of California, Davis 09/2003–07/2007

Ph.D. in Electrical and Computer Engineering

Advisor: Prof. S. J. Ben Yoo

Dissertation: Highly scalable optical-label switching network systems incorporating label swapping and optical regeneration

University of California, Davis 08/2001–09/2003

M.S. in Electrical and Computer Engineering

Advisor: Prof. S. J. Ben Yoo

University of Science and Technology of China 09/1996–07/2001

B. S. in Electrical Engineering

WORK EXPERIENCE

Professor 06/2014–present

Director of the Intelligent Networking systems & Future InterNet InfrasTructurE (INFINITE) Lab
School of Information Science and Technology
University of Science and Technology of China
Hefei, Anhui, China

Associate Professor 01/2011–06/2014

School of Information Science and Technology
University of Science and Technology of China
Hefei, Anhui, China

Senior Software Engineer 07/2007–01/2011

Cisco Systems
San Jose, California, USA

JOURNAL EDITORS

- Series Editor, Optical Communications and Networks Series, IEEE Communications Magazine, 2018–.
- Series Editor, Optical Communications Series, IEEE Communications Magazine, 2017–2018.
- Guest Editor, “Latest Advances in Optical Networks for 5G Communications and Beyond”, IEEE Journal on Selected Areas in Communications, 2020.
- Guest Editor, “Ambient Assisted Living Communications”, IEEE Communications Magazine, 2014.
- Lead Guest Editor, “Optical Networks in Cloud Computing”, IEEE Network, 2013.
- Editorial Board Member of:
 - IEEE Transactions on Network and Service Management, 2017–.
 - Optics Express, 2019–.
 - IEEE Systems Journal, 2020–.
 - IEEE Open Journal of the Communications Society, 2019–.
 - IEEE Communications Magazine, 2015–.
 - Optical Switching and Networking (Elsevier), 2010–.
 - Telecommunication Systems Journal (Springer), 2011–2019.
 - Photonic Network Communications Journal (Springer), 2015–2019.
 - European Transactions on Emerging Telecommunications Technologies (Wiley), 2012–2018.
 - KSII Transactions on Internet and Information Systems, 2015–2018.

CONFERENCE ACTIVITIES

- Keynote Speaker of:
 - IEEE Latin-American Conference on Communications (LATINCOM), Virtual Conference, Nov. 2020.
 - IEEE International Symposium on Broadband Multimedia Systems and Broadcasting (BMSB), Paris, France, Oct. 2020.
 - IEEE 5G Summit, Shanghai, China, Jul. 2017.
- Publicity Co-Chair of:
 - IEEE Global Communications Conference (GLOBECOM) 2022.
 - IEEE International Conference on Network Softwarization (NetSoft) 2021.
 - IEEE Global Communications Conference (GLOBECOM) 2015.
- Technical Co-Chair of:
 - 24th International Conference on Optical Network Design and Modeling (ONDM) 2020.
 - Workshop on Cloud Computing Systems, Networks and Applications (CCSNA) in GLOBECOM 2015.
- Symposium Chair/Co-Chair of:
 - Next-Generation Networking and Internet Symposium at GLOBECOM 2021.
 - Track 3 (Networks Architectures, Management and Applications) at Asia Communications and Photonics Conference (ACP) 2020.
 - Optical Networks and Systems Symposium at IEEE International Conference on Communications (ICC) 2020.
 - International Conference on Wireless Communications and Signal Processing (WCSP) 2019.
 - Track 3 (Networks Architectures, Management and Applications) at Asia Communications and Photonics Conference (ACP) 2018.

- International Conference on Computing, Networking & Communications (ICNC) 2016.
- ICNC 2015, ICNC 2014, and ICNC 2013.
- WCSP 2014.
- International Symposium on Communication Systems, Networks and Digital Signal Processing (CSNDSP) 2012.
- TPC Member of:
 - N3 Subcommittee in the Optical Networking and Communication Conference & Exhibition (OFC), 2022–.
 - OSA Signal Processing in Photonic Communications (SPPCom), 2011–2015.
 - IEEE Photonics Conference (IPC), 2013–2020.
 - INFOCOM, ICC, GLOBECOM, ICNC, and many others.

PROFESSIONAL ACTIVITIES

- Member, Steering Committee of IEEE International Conference on High Performance Switching and Routing (HPSR), 2018–2020.
- Vice Chair, IEEE Communications Society (ComSoc) Technical Committee on Optical Networking (ONTC), 2020–.
- Secretary, IEEE Communications Society (ComSoc) Technical Committee on Optical Networking (ONTC), 2017–2019.
- Member, Best Paper Selection Committee of GLOBECOM 2015.
- Chair, Special Interest Group on Green Multimedia Communications, IEEE ComSoc Technical Committee on Multimedia Communications (MMTC), 2014–.
- Vice-Chair, Special Interest Group on Multimedia Content Distribution: Infrastructure and Algorithms (MCDIA), IEEE ComSoc Technical Committee on Multimedia Communications (MMTC), 2012–2014.

PROFESSIONAL Memberships

- Senior Member of IEEE.
 - Member, IEEE Communication Society.
 - Member, IEEE Photonics Society.
- Senior Member of Optical Society of America (OSA).

HONORS AND AWARDS

- IEEE ComSoc Distinguished Lecturer, 2018–2021.
- Best Paper Awards from
 - 22nd Conference on Optical Network Design and Modeling (ONDM), 2018.
 - IEEE International Conference on Communications (ICC) 2015.
 - ICNC 2014.
 - GLOBECOM 2013.
 - ICC 2013.
- Team Achievement Award for Outstanding Contributions, Cisco Systems, 2008.

PUBLICATIONS

1. Book Chapters

- B1. **Zuqing Zhu**, “Energy-Efficient Optical Transport Networks with Mixed Regenerator Placement,” Chapter 6 in *Intelligent Systems for Optical Networks Design: Advancing Techniques*, IGI Global, DOI: 10.4018/978-1-4666-3652-1, 2013.

2. Editorials

- E19. Massimo Tornatore, Elaine Wong, **Zuqing Zhu**, Ramon Casellas, Balagangadhar G. Bathula, and Lena Wosinska, "Guest Editorial Latest Advances in Optical Networks for 5G Communications and Beyond," *IEEE Journal on Selected Areas in Communications*, vol. 39, no. 9, pp. 2667-2671, Sept. 2021 (Guest Editorial).
- E18. Mohamed-Slim Alouini and **Zuqing Zhu**, "Optical Communications and Networks," *IEEE Communications Magazine*, vol. 59, no. 6, pp. 110-110, Jun. 2021 (Series Editorial).
- E17. Ramon Casellas, Raul Munoz, Marija Furdek, Salvatore Spadaro, and **Zuqing Zhu**, "Introduction to the ONDM2020 Special Issue," *IEEE/OSA Journal of Optical Communications and Networking*, vol. 13, no. 6, ONDM1-ONDM2, Jun. 2021 (Guest Editorial).
- E16. Mohamed-Slim Alouini, Xiang Liu, and **Zuqing Zhu**, "Optical Communications and Networks," *IEEE Communications Magazine*, vol. 59, no. 1, pp. 118-118, Jan. 2021 (Series Editorial).
- E15. Mohamed-Slim Alouini, Xiang Liu, and **Zuqing Zhu**, "Optical Communications and Networks," *IEEE Communications Magazine*, vol. 58, no. 9, pp. 46-46, Sept. 2020 (Series Editorial).
- E14. **Zuqing Zhu**, Mohamed-Slim Alouini, and Xiang Liu, "Optical Communications and Networks," *IEEE Communications Magazine*, vol. 58, no. 5, pp. 18-18, May 2020 (Series Editorial).
- E13. Mohamed-Slim Alouini, Xiang Liu, and **Zuqing Zhu**, "Optical Communications and Networks," *IEEE Communications Magazine*, vol. 58, no. 2, pp. 12-12, Feb. 2020 (Series Editorial).
- E12. **Zuqing Zhu**, Xiang Liu, and Mohamed-Slim Alouini, "Advances in Optical Communications and Networking Technologies," *IEEE Communications Magazine*, vol. 57, no. 10, pp. 12-12, Oct. 2019 (Series Editorial).
- E11. Xiang Liu and **Zuqing Zhu**, "Advances in Optical Communications and Networking Technologies," *IEEE Communications Magazine*, vol. 57, no. 4, pp. 130-130, Apr. 2019 (Series Editorial).
- E10. **Zuqing Zhu** and Xiang Liu, "Advances in Optical Communications Technologies," *IEEE Communications Magazine*, vol. 56, no. 8, pp. 112-112, Aug. 2018 (Series Editorial).
- E9. Xiang Liu and **Zuqing Zhu**, "Advances in Optical Communications Technologies," *IEEE Communications Magazine*, vol. 56, no. 2, pp. 176-176, Feb. 2018 (Series Editorial).
- E8. Xiang Liu and **Zuqing Zhu**, "Advances in Optical Communications Technologies," *IEEE Communications Magazine*, vol. 55, no. 8, pp. 155-155, Aug. 2017 (Series Editorial).
- E7. Xiang Liu and **Zuqing Zhu**, "Advances in Optical Communications Technologies," *IEEE Communications Magazine*, vol. 55, no. 2, pp. 142-142, Feb. 2017 (Series Editorial).
- E6. Xinlin Huang, Xiaomin Ma, Fei Hu, and **Zuqing Zhu**, "Editorial for Chinacom2015 Special Issue," *Mobile Networks & Applications*, vol. 21, no. 6, pp. 905-907, Dec. 2016 (Guest Editorial).
- E5. Joel J. P. C. Rodrigues, Sudip Misra, Haohong Wang, and **Zuqing Zhu**, "Ambient Assisted Living Communications," *IEEE Communications Magazine*, vol. 53, no. 1, pp. 24-25, Jan. 2015 (Guest Editorial).
- E4. Sana Ullah, Joel J. P. C. Rodrigues, Farrukh Aslam, Christos Verikoukis, and **Zuqing Zhu**, "Protocols and Architectures for Next-Generation Wireless Sensor Networks," *International Journal of Distributed Sensor Networks*, vol. 2014, pp. 1-3, Dec. 2014 (Guest Editorial).
- E3. Piotr Zwierzykowski, Steven Gao, Wai Pang Ng, and **Zuqing Zhu**, "Photonic and RF Communications Systems," *IET Circuits, Devices & Systems*, vol. 8, no. 5, pp. 331-333, Sept. 2014 (Guest Editorial).
- E2. Jason Jue, Vincenzo Eramo, Victor Lopez, and **Zuqing Zhu**, "Software-Defined Elastic Optical Networks," *Photonic Network Communications*, vol. 28, no. 1, pp. 1-3, Aug. 2014 (Guest Editorial).

E1. **Zuqing Zhu**, S. J. B. Yoo, Zhaohui Li, and Nicolas Fontaine, "Optical Networks in Cloud Computing," *IEEE Network*, vol. 27, no. 6, pp. 4-5, Nov./Dec. 2013 (Guest Editorial).

3. Referred Journal Papers

J136. Yuhan Xue and **Zuqing Zhu**, "On the Upgrade of Service Function Chains with Heterogeneous NFV Platforms," *IEEE Transactions on Network and Service Management*, in Press, 2021 (Corresponding Author).

J135. Baojia Li, Ruyun Zhang, Xiaojian Tian, and **Zuqing Zhu**, "Multi-Agent and Cooperative Deep Reinforcement Learning for Scalable Network Automation in Multi-Domain SD-EONs," *IEEE Transactions on Network and Service Management*, in Press, 2021 (Corresponding Author).

J134. Xiaojian Tian, Baojia Li, Rentao Gu, and **Zuqing Zhu**, "Reconfiguring Multicast Sessions in Elastic Optical Networks Adaptively with Graph-Aware Deep Reinforcement Learning," *IEEE/OSA Journal of Optical Communications and Networking*, vol. 13, no. 11, pp. 253-265, Nov. 2021 (Corresponding Author).

J133. Xiaoqin Pan, Sicheng Zhao, Hao Yang, Shaofei Tang, and **Zuqing Zhu**, "Scheduling Virtual Network Reconstructions in Parallel in Hybrid Optical/Electrical Datacenter Networks," *IEEE/OSA Journal of Lightwave Technology*, vol. 39, no. 17, pp. 5371-5382, Sept. 2021 (Corresponding Author).

J132. Yuanhao Liu, Fen Zhou, Cao Chen, **Zuqing Zhu**, Tao Shang, and Juan-Manuel Torres-Moreno, "Disaster Protection in Inter-DataCenter Networks Leveraging Cooperative Storage," *IEEE Transactions on Network and Service Management*, vol. 18, no. 3, pp. 2598-2611, Sept. 2021.

J131. Feng Chen, Man Song, Fen Zhou, and **Zuqing Zhu**, "Security-aware Planning of Packet-over-Optical Networks in Consideration of OTN Encryption," *IEEE Transactions on Network and Service Management*, vol. 18, no. 3, pp. 3209-3220, Sept. 2021 (Corresponding Author).

J130. Qitao Zheng, Shaofei Tang, Bofan Chen, and **Zuqing Zhu**, "Highly-Efficient and Adaptive Network Monitoring: When INT Meets Segment Routing," *IEEE Transactions on Network and Service Management*, vol. 18, no. 3, pp. 2587-2597, Sept. 2021 (Corresponding Author).

J129. Hui Liang, Nelson L. S. da Fonseca, and **Zuqing Zhu**, "On the Cross-Layer Network Planning for Flexible Ethernet over Elastic Optical Networks," *IEEE Transactions on Network and Service Management*, vol. 18, no. 3, pp. 3691-3705, Sept. 2021 (Corresponding Author).

J128. Qian Lv, Fen Zhou, and **Zuqing Zhu**, "On the Bilevel Optimization to Design Control Plane for SDONs in Consideration of Planned Physical-Layer Attacks," *IEEE Transactions on Network and Service Management*, vol. 18, no. 3, pp. 3221-3230, Sept. 2021 (Corresponding Author).

J127. Lu Dong, Nelson L. S. da Fonseca, and **Zuqing Zhu**, "Application-driven Provisioning of Service Function Chains over Heterogeneous NFV Platforms," *IEEE Transactions on Network and Service Management*, vol. 18, no. 3, pp. 3037-3048, Sept. 2021 (Corresponding Author).

J126. Deyun Li, Hongqiang Fang, Xu Zhang, Jin Qi, and **Zuqing Zhu**, "DeepMDR: A Deep-Learning-assisted Control Plane System for Scalable, Protocol-independent, and Multi-domain Network Automation," *IEEE Communications Magazine*, vol. 59, no. 3, pp. 62-68, Mar. 2021 (Corresponding Author).

J125. Yuhan Xue and **Zuqing Zhu**, "Hybrid Flow Table Installation: Leveraging External Memory to Enhance Programmable Data Plane Switches for In-Network Computing," *IEEE Transactions on Network and Service Management*, vol. 18, no. 1, pp. 429-440, Mar. 2021 (Corresponding Author).

J124. Siqi Liu, Jiawei Kong, Xiaoqin Pan, Deyun Li, and **Zuqing Zhu**, "Highly-Efficient and Automatic Spectrum Inspection based on AutoEncoder and Semi-Supervised Learning for Anomaly Detection in EONs," *IEEE/OSA Journal of Lightwave Technology*, vol. 39, no. 5, pp. 1243-1254, Mar. 2021 (Corresponding Author).

J123. Xu Zhang, Baojia Li, Jianquan Peng, Xiaoqin Pan, and **Zuqing Zhu**, "You Calculate and I Provision: A DRL-assisted Service Framework to Realize Distributed and Tenant-driven Virtual Network Slicing," *IEEE/OSA Journal of Lightwave Technology*, vol. 39, no. 1, pp. 4-16, Jan. 2021 (Corresponding Author).

- J122. Sicheng Zhao and **Zuqing Zhu**, “On Virtual Network Reconfiguration in Hybrid Optical/Electrical Datacenter Networks,” *IEEE/OSA Journal of Lightwave Technology*, vol. 38, no. 23, pp. 6424-6436, Dec. 2020 (Corresponding Author).
- J121. Sicheng Zhao, Xing Wu, and **Zuqing Zhu**, “On Parallel and Hitless vSDN Reconfiguration,” *IEEE/ACM Transactions on Networking*, vol. 28, no. 6, pp. 2657-2670, Dec. 2020 (Corresponding Author).
- J120. Xiaoqin Pan, Shaofei Tang, Siqi Liu, Jiawei Kong, Xu Zhang, Daoyun Hu, Jin Qi, and **Zuqing Zhu**, “Privacy-Preserving Multilayer In-Band Network Telemetry and Data Analytics: For Safety, Please do not Report Plaintext Data,” *IEEE/OSA Journal of Lightwave Technology*, vol. 38, no. 21, pp. 5855-5866, Nov. 2020 (Corresponding Author).
- J119. Min Wang, Hancheng Lu, Siqi Liu, and **Zuqing Zhu**, “How to Mislead AI-assisted Network Automation in SD-IPoEONs: A Comparison Study of DRL- and GAN-based Approaches,” *IEEE/OSA Journal of Lightwave Technology*, vol. 38, no. 20, pp. 5574-5585, Oct. 2020 (Corresponding Author).
- J118. Zhuojia Gu, Hancheng Lu, and **Zuqing Zhu**, “On Throughput Optimization and Bound Analysis in Cache-Enabled Fiber-Wireless Networks,” *IEEE Transactions on Vehicular Technology*, vol. 69, no. 8, pp. 9068-9082, Aug. 2020.
- J117. Shaofei Tang, Deyun Li, Bin Niu, Jianquan Peng, and **Zuqing Zhu**, “Sel-INT: A Runtime-Programmable Selective In-Band Network Telemetry System,” *IEEE Transactions on Network and Service Management*, vol. 17, no. 2, pp. 708-721, Jun. 2020 (Corresponding Author).
- J116. Yuhan Xue, Jianquan Peng, Kai Han, and **Zuqing Zhu**, “On Table Resource Virtualization and Network Slicing in Programmable Data Plane,” *IEEE Transactions on Network and Service Management*, vol. 17, no. 1, pp. 319-331, Jan. 2020 (Corresponding Author).
- J115. Qinhezi Li, Hongqiang Fang, Deyun Li, Jianquan Peng, Jiawei Kong, Wei Lu, and **Zuqing Zhu**, “Scalable Knowledge-defined Orchestration for Hybrid Optical/Electrical Datacenter Networks,” *IEEE/OSA Journal of Optical Communications and Networking*, vol. 12, no. 2, A113-A122, Feb. 2020 (**Invited**) (Corresponding Author).
- J114. Shaofei Tang, Jiawei Kong, Bin Niu, and **Zuqing Zhu**, “Programmable Multilayer INT: An Enabler for AI-assisted Network Automation,” *IEEE Communications Magazine*, vol. 58, no. 1, pp. 26-32, Jan. 2020 (Corresponding Author).
- J113. Wei Lu, Lipei Liang, Bingxin Kong, Baojia Li, and **Zuqing Zhu**, “AI-Assisted Knowledge-Defined Network Orchestration for Energy-Efficient Data Center Networks,” *IEEE Communications Magazine*, vol. 58, no. 1, pp. 86-92, Jan. 2020 (Corresponding Author).
- J112. Baojia Li, Wei Lu, and **Zuqing Zhu**, “Deep-NFVOrch: Leveraging Deep Reinforcement Learning to Achieve Adaptive vNF Service Chaining in EON-DCIs,” *IEEE/OSA Journal of Optical Communications and Networking*, vol. 12, no. 1, pp. A18-A27, Jan. 2020 (**Invited**) (Corresponding Author).
- J111. Xiaoliang Chen, Baojia Li, Roberto Proietti, Che-Yu Liu, **Zuqing Zhu**, and S. J. Ben Yoo, “Demonstration of Distributed Collaborative Learning with End-to-End QoT Estimation in Multi-Domain Elastic Optical Networks,” *Optics Express*, vol. 27, no. 24, pp. 35700-35709, 2019.
- J110. Hongqiang Fang, Wei Lu, Qinhezi Li, Jiawei Kong, Lipei Liang, Bingxin Kong, and **Zuqing Zhu**, “Predictive Analytics based Knowledge-Defined Orchestration in a Hybrid Optical/Electrical Datacenter Network Testbed,” *IEEE/OSA Journal of Lightwave Technology*, vol. 37, no. 19, pp. 4921-4934, Oct. 2019 (Corresponding Author).
- J109. Siqi Liu, Bin Niu, Deyun Li, Shaofei Tang, Jiawei Kong, Baojia Li, Xiaokang Xie, and **Zuqing Zhu**, “DL-Assisted Cross-Layer Orchestration in Software-Defined IP-over-EONs: From Algorithm Design to System Prototype,” *IEEE/OSA Journal of Lightwave Technology*, vol. 37, no. 17, pp. 4426-4438, Sept. 2019 (Corresponding Author).
- J108. Bin Niu, Jiawei Kong, Shaofei Tang, Yingcong Li, and **Zuqing Zhu**, “Visualize Your IP-over-Optical Network in Realtime: A P4-based Flexible Multilayer In-Band Network Telemetry (ML-INT) System,” *IEEE*

Access, vol. 7, pp. 82413-82423, 2019 (Corresponding Author).

J107. Xiaoliang Chen, Baojia Li, Roberto Proietti, Hongbo Lu, **Zuqing Zhu**, and S. J. Ben Yoo, "Deep-RMSA: A Deep Reinforcement Learning Framework for Routing, Modulation and Spectrum Assignment in Elastic Optical Networks," *IEEE/OSA Journal of Lightwave Technology*, vol. 37, no. 16, pp. 4155-4163, Aug. 2019.

J106. Chuan Xu, Jiajie Wang, **Zuqing Zhu**, and Dusit Niyato, "Energy-Efficient WLANs with Resource and Re-association Scheduling Optimization," *IEEE Transactions on Network and Service Management*, vol. 16, no. 2, pp. 563-577, Jun. 2019.

J105. Xiaoliang Chen, Baojia Li, Roberto Proietti, **Zuqing Zhu**, and S. J. Ben Yoo, "Self-taught Anomaly Detection with Hybrid Unsupervised/Supervised Machine Learning in Optical Networks," *IEEE/OSA Journal of Lightwave Technology*, vol. 37, no. 7, pp. 1742-1749, Apr. 2019 (**Invited**).

J104. Sicheng Zhao, Deyun Li, Kai Han, and **Zuqing Zhu**, "Proactive and Hitless vSDN Reconfiguration to Balance Substrate TCAM Utilization: From Algorithm Design to System Prototype," *IEEE Transactions on Network and Service Management*, vol. 16, no. 2, pp. 647-660, Jun. 2019 (Corresponding Author).

J103. Haitao Wu, Fen Zhou, **Zuqing Zhu**, and Yaojun Chen, "Analysis Framework of RSA Algorithms in Elastic Optical Rings," *IEEE/OSA Journal of Lightwave Technology*, vol. 37, no. 4, pp. 1113-1122, Feb. 2019.

J102. Gengchen Liu, Kaiqi Zhang, Xiaoliang Chen, Hongbo Lu, Jiannan Guo, Jie Yin, Roberto Proietti, **Zuqing Zhu**, and S. J. Ben Yoo, "Hierarchical Learning for Cognitive End-to-End Service Provisioning in Multi-Domain Autonomous Optical Networks," *IEEE/OSA Journal of Lightwave Technology*, vol. 37, no. 1, pp. 218-225, Jan. 2019 (**Invited**).

J101. Xiaoliang Chen, **Zuqing Zhu**, Roberto Proietti, and S. J. Ben Yoo, "On Incentive-Driven VNF Service Chaining in Inter-Datacenter Elastic Optical Networks: A Hierarchical Game-Theoretic Mechanism," *IEEE Transactions on Network and Service Management*, vol. 16, no. 1, pp. 1-12, Jan. 2019.

J100. Roberto Proietti, Xiaoliang Chen, Kaiqi Zhang, Gengchen Liu, Mohammadsadegh Shamsabardeh, Alberto Castro, Luis Velasco, **Zuqing Zhu**, and S. J. Ben Yoo, "Experimental Demonstration of Machine Learning-aided QoT Estimation in Multi-domain Elastic Optical Networks with Alien Wavelengths," *IEEE/OSA Journal of Optical Communications and Networking*, vol. 11, no. 1, pp. A1-A10, Jan. 2019 (**Invited**).

J99. Jiannan Guo and **Zuqing Zhu**, "When Deep Learning Meets Inter-Datacenter Optical Network Management: Advantages and Vulnerabilities," *IEEE/OSA Journal of Lightwave Technology*, vol. 36, no. 20, pp. 4761-4773, Oct. 2018 (Corresponding Author).

J98. Bingxin Kong, Siqi Liu, Jie Yin, Shengru Li, and **Zuqing Zhu**, "Demonstration of Application-driven Network Slicing and Orchestration in Optical/Packet Domains: On-demand vDC Expansion for Hadoop MapReduce Optimization," *Optics Express*, vol. 26, no. 11, pp. 14066-14085, 2018 (Corresponding Author).

J97. Kai Han, Shengru Li, Shaofei Tang, Huibai Huang, Sicheng Zhao, Guilu Fu, and **Zuqing Zhu**, "Application-Driven End-to-End Slicing: When Wireless Network Virtualization Orchestrates with NFV-based Mobile Edge Computing," *IEEE Access*, vol. 6, pp. 26567-26577, 2018 (Corresponding Author).

J96. Baojia Li, Wei Lu, Siqi Liu, and **Zuqing Zhu**, "Deep-Learning-Assisted Network Orchestration for On-Demand and Cost-Effective vNF Service Chaining in Inter-DC Elastic Optical Networks," *IEEE/OSA Journal of Optical Communications and Networking*, vol. 10, no. 10, pp. D29-D41, Oct. 2018 (Corresponding Author).

J95. Huibai Huang, Bin Niu, Shaofei Tang, Shengru Li, Sicheng Zhao, Kai Han, and **Zuqing Zhu**, "Realizing Highly-Available, Scalable and Protocol-Independent vSDN Slicing with a Distributed Network Hypervisor System," *IEEE Access*, vol. 6, pp. 13513-13522, 2018 (Corresponding Author).

J94. Wei Lu, Ping Lu, Quanying Sun, Shui Yu, and **Zuqing Zhu**, "Profit-Aware Distributed Online Scheduling for Data-Oriented Tasks in Cloud Datacenters," *IEEE Access*, vol. 6, pp. 15629-15642, 2018

(Corresponding Author).

J93. Wei Lu, Xiaofu Yin, Xiaobao Cheng, and **Zuqing Zhu**, “On Cost-Efficient Integrated Multilayer Protection Planning in IP-over-EONs,” *IEEE/OSA Journal of Lightwave Technology*, vol. 36, no. 10, pp. 2037-2048, May 2018 (Corresponding Author).

J92. Xiaokang Xie, Qing Ling, Ping Lu, Wei Xu, and **Zuqing Zhu**, “Evacuate before Too Late: Distributed Backup in Inter-DC Networks with Progressive Disasters,” *IEEE Transactions on Parallel and Distributed Systems*, vol. 29, no. 5, pp. 1058-1074, May 2018 (Corresponding Author).

J91. Xiaoliang Chen, **Zuqing Zhu**, Jiannan Guo, Sheng Kang, Roberto Proietti, Alberto Castro, and S. J. B. Yoo, “Leveraging Mixed-Strategy Gaming to Realize Incentive-Driven VNF Service Chain Provisioning in Broker-based Elastic Optical Inter-Datacenter Networks,” *IEEE/OSA Journal of Optical Communications and Networking*, vol. 10, no. 2, pp. A232-A240, Feb. 2018 (**Invited**).

J90. **Zuqing Zhu**, Bingxin Kong, Jie Yin, Sicheng Zhao, and Shengru Li, “Build to Tenants’ Requirements: On-Demand Application-Driven vSD-EON Slicing,” *IEEE/OSA Journal of Optical Communications and Networking*, vol. 10, no. 2, pp. A206-A215, Feb. 2018 (**Invited**).

J89. Siqi Liu, Wei Lu, and **Zuqing Zhu**, “On the Cross-Layer Orchestration to Address IP Router Outages with Cost-Efficient Multilayer Restoration in IP-over-EONs,” *IEEE/OSA Journal of Optical Communications and Networking*, vol. 10, no. 1, pp. A122-A132, Jan. 2018 (**Invited**) (Corresponding Author).

J88. Shengru Li, Kai Han, Nirwan Ansari, Qinkun Bao, Daoyun Hu, Junjie Liu, Shui Yu, and **Zuqing Zhu**, “Improving SDN Scalability with Protocol-Oblivious Source Routing: A System-Level Study,” *IEEE Transactions on Network and Service Management*, vol. 15, no. 1, pp. 275-288, Mar. 2018 (Corresponding Author).

J87. Xiaoliang Chen, Muqing Zhou, Shilin Zhu, Sheng Kang, Lu Sun, and **Zuqing Zhu**, “Optimizing FIPP-p-Cycle Protection Design to Realize Availability-aware Elastic Optical Networks,” *IEEE Communications Letters*, vol. 22, no. 1, pp. 65-68, Jan. 2018 (Corresponding Author).

J86. Quanying Sun, Yuhan Xue, Shengru Li, and **Zuqing Zhu**, “Design and Demonstration of High-Throughput Protocol Oblivious Packet Forwarding to Support Software-Defined Vehicular Networks,” *IEEE Access*, vol. 5, 24004-24011, 2017 (Corresponding Author).

J85. Ping Lu and **Zuqing Zhu**, “Data-Oriented Task Scheduling in Fixed- and Flexible-Grid Multilayer Inter-DC Optical Networks: A Comparison Study,” *IEEE/OSA Journal of Lightwave Technology*, vol. 35, no. 24, pp. 5335-5346, Dec. 2017 (Corresponding Author).

J84. Jing Zhu and **Zuqing Zhu**, “Physical-Layer Security in MCF-based SDM-EONs: Would Crosstalk-Aware Service Provisioning be Good Enough?” *IEEE/OSA Journal of Lightwave Technology*, vol. 35, no. 22, pp. 4826-4837, Nov. 2017 (Corresponding Author).

J83. Lu Sun, Xiaoliang Chen and **Zuqing Zhu**, “Multi-Broker based Service Provisioning in Multi-Domain SD-EONs: Why and How Should the Brokers Cooperate with Each Other?,” *IEEE/OSA Journal of Lightwave Technology*, vol. 35, no. 17, pp. 3722-3733, Sept. 2017 (Corresponding Author).

J82. Jie Yin, Jiannan Guo, Bingxin Kong, Heqing Yin, and **Zuqing Zhu**, “Experimental Demonstration of Building and Operating QoS-aware Survivable vSD-EONs with Transparent Resiliency,” *Optics Express*, vol. 25, no. 13, pp. 15468-15480, 2017 (Corresponding Author).

J81. Junjie Liu, Wei Lu, Fen Zhou, Ping Lu, and **Zuqing Zhu**, “On Dynamic Service Function Chain Deployment and Readjustment,” *IEEE Transactions on Network and Service Management*, vol. 14, no. 3, pp. 543-553, Sept. 2017 (Corresponding Author).

J80. Lipei Liang, Wei Lu, Massimo Tornatore, and **Zuqing Zhu**, “Game-Assisted Distributed Decision-Making to Build Virtual TDM-PONs in C-RANs Adaptively,” *IEEE/OSA Journal of Optical Communications and Networking*, vol. 9, no. 7, pp. 546-554, Jul. 2017 (Corresponding Author).

J79. Yixiang Wang, Ping Lu, Wei Lu, and **Zuqing Zhu**, “Cost-Efficient Virtual Network Function Graph

(vNFG) Provisioning in Multidomain Elastic Optical Networks,” *IEEE/OSA Journal of Lightwave Technology*, vol. 35, no. 13, pp. 2712-2723, Jul. 2017 (Corresponding Author).

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