Jingxuan (Jensen) Zhang

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Research Interests

Network and application integration
Software-defined networking
Machine learning in networks

Education

Yale University

Visiting Assistant in Research (Computer Science), 2018.11 - 2020.10

Tongji University

Ph.D. Student (Computer Science), 2017.03 - now

Master Student (Computer Science), 2015.09 - 2017.03

B.Sc. (Computer Science), 2013.03 - 2015.07

Undergraduate Student (Minor in Mathematics), 2011.09 - 2013.01

Awards

ACM SIGCOMM NAI 2022 Best Paper (2022).

Participant Award of ACM Student Research Competition (2020).

China Scholarship Council Support (2018).

Outstanding Graduate of Tongji University (2015).

Second prize in Chinese National Undergraduate Electronic Design Contest (2014).

Honor Mention prize in ICM/MCM (2014).

First prize in Chinese National Undergraduate Mathematics Competition (2012).

Internet Standards

1. **RFC 9275** - ALTO Extension: Path Vector
2. **RFC 9241** - Content Delivery Network Interconnection (CDNI) Request Routing: CDNI Footprint and Capabilities Advertisement using ALTO
3. **RFC 9240** - ALTO Extension: Entity Property Maps
4. **Active Internet-Draft (IETF ALTO WG; In WG Last Call)** - YANG Data Models for the Application-Layer Traffic Optimization (ALTO) Protocol

Publications

1. Dunefsky, J., Soleimani, M., Yang R., Ros-Giralt J., Lassnig M., Wuerthwein, F.K., Yang, Y.R., Monga, I., Gao, K. and **Zhang, J.**, 2022. Transport Control Networking: Optimizing Efficiency and Control of Data Transport for Data-Intensive Networks. In Proceedings of the ACM SIGCOMM 2022 Workshop on Network-Application Integration (NAI), ACM. **(ACM SIGCOMM NAI 2022 Best Paper)**

2. **Zhang, J.**, 2021. IntQOE: Integrated End-to-end QoE Optimization for Edge Computing Enabled Web Application. In Proceedings of the ACM SIGCOMM 2021 Workshop on Network-Application Integration (NAI), ACM.

3. Xiang, Q., Le, F., **Zhang, J.** and Yang, Y.R., 2021. Toward Stable Interdomain Network-Application Integration. In Proceedings of the ACM SIGCOMM 2021 Workshop on Network-Application Integration (NAI), ACM.

4. **Zhang, J.**, Contreras, L., Gao, K., Cano, F. , Cano, P., Escribano, A. and Yang, Y.R., 2021. Sextant: Enabling Automated Network-aware Application Optimization in Carrier Networks. In Proceedings of the International Symposium on Integrated Network Management (IM), IFIP/IEEE.

5. Cheng Y., Luo N., **Zhang, J.**, Antonopoulos T., Piskac R. and Xiang Q., 2021. Looking for the Maximum Independent Set: A New Perspective on the Stable Path Problem. In Proceedings of the *40th IEEE International Conference on Computer Communications (INFOCOM)*, IEEE.

6. **Zhang, J.** and Yang, Y.R., 2020. COC: Hierarchical Coflow Ordering for WAN Bandwidth Optimization in Inter-Data Center. In Proceedings of the *Annual conference of the ACM Special Interest Group on Data Communication on the applications, technologies, architectures, and protocols for computer communication (SIGCOMM)*, ACM.

7. **Zhang, J.**, Gao, K., Yang, Y.R. and Bi, J., 2020. Prophet: Toward Fast, Error-Tolerant Model-Based Throughput Prediction for Reactive Flows in DC Networks. In *Transactions on Networking (TON)*, IEEE/ACM.

8. Xiang, Q., **Zhang, J.**, Gao, K., Lim, Y.S., Le, F., Li, G. and Yang, Y.R., 2020, July. Toward Optimal Software-Defined Interdomain Routing. In Proceedings of the *39th IEEE International Conference on Computer Communications (INFOCOM)*, IEEE, 1529-1538.

9. Xiang, Q., Wang, X., **Zhang, J.**, Newman, H., Yang, Y.R. and Liu, J., 2019. Unicorn: Unified Resource Orchestration for Multi-Domain, Geo-Distributed Data Analytics. In *Future Generation Computer Systems*, Elsevier.

10. Xiang, Q., **Zhang, J.**, Wang, X., Liu, J., Guok, C., Le, F., MacAuley, J., Newman, H. and Yang, Y.R., 2018. Fine-Grained, Multi-Domain Network Resource Abstraction as a Fundamental Primitive to Enable High-Performance, Collaborative Data Sciences. In Proceedings of the *International Conference for High Performance Computing, Networking, Storage and Analysis (SC)*, ACM.

11. Gao, K., **Zhang, J.**, Yang, Y.R. and Bi, J. 2018., Prophet: Fast Accurate Model-based Throughput Prediction for Reactive Flow in DC Networks. In Proceedings of the *37th IEEE International Conference on Computer Communications (INFOCOM)*, IEEE, 720-728.

12. Wang, W., **Zhang, J.**, Guo, D., Xiang, Q., Huang, C., Chang, J. and Zhang, L. 2016. Towards an emerging cloudware paradigm for transparent computing. In

Proceedings of the *9th IEEE/ACM International Conference on Utility and Cloud Computing (UCC)*, IEEE, 43-48.

Biography

Jingxuan Zhang is a PhD candidate in the Department of Computer Science at Tongji University, advised by Prof. Y. Richard Yang. He was also a CSC (China Scholarship Council) sponsored visiting researcher at Yale univerisity from 2018 to 2020. His doctoral research focuses on network visibility, intelligence and controllability for large-scale data-intensive network. He is also an active member of IETF ALTO WG and OpenDaylight open source community. He has published 3 RFCs and 2 Active WG Internet-Drafts.

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