

Name: **Yang Guo**

Affiliation: **NIST**

We are moving into the Software Defined Infrastructure age where the system and the underlying networks are increasingly programmable, virtualizable, and transformable. Software-Defined Exchanges (SDX) have been identified as a key enabling component in realizing such a vision. SDX connects multiple Software defined infrastructures, and allows to provide application specific end-to-end infrastructure with ease and flexibility.

I am interested in the security aspects of Software Defined Infrastructure and SDX. Specifically, I am interested in (1) discovering the new vulnerabilities embedded in such an infrastructure and studying how to protect the infrastructure from such vulnerabilities; and (2) exploring the opportunities to offer novel security services in such an infrastructure. I have been working extensively on the security issues on SDN [1, 2]. For instance, our work in [1] presents a solution that scales up the SDN's control path capacity in face of the DDoS attack. I also propose a fine-grained, flexible traffic monitoring mechanism that facilitates the anomaly detection and mitigation [2]. I hope that I can apply my expertise on SDN security to the study of the Software Defined Infrastructure and SDX.

I am a computer scientist in the Advanced Networking Technologies Division (ANDT) at the National Institute of Standards and Technology (NIST), Gaithersburg, MD. My research interests span broadly over the distributed systems and networking, with a focus on Software Defined Networking (SDN), Cloud computing, and Internet content distribution systems. I obtained Ph.D. from University of Massachusetts at Amherst in 2000, and B.S. and M.S. from Shanghai Jiao Tong University. Before joining the NIST, I was with Bell Labs Research (Crawford Hill, NJ) from 2010 to 2015, working on the monitoring and security of Software-Defined Networking and Cloud orchestration. From 2005 to 2010, I was a Principal Scientist at Technicolor (formerly Thomson) Corporate Research, working on Internet wide content distribution and consumption. I have published over 60 research papers in several renowned technical journals and conferences, and holds more than 20 granted/pending US patents.

Reimbursement for the travel is NOT required.

References:

[1] An Wang, **Yang Guo**, Fang Hao, T.V. Lakshman, Songqing Chen, "*Scotch: Scaling up SDN Control-Plane using vSwitch Based Overlay*", ACM CoNEXT, Sydney, Australia, December, 2014.

[2] An Wang, **Yang Guo**, Fang Hao, T.V. Lakshman, Songqing Chen, "*UMON: Flexible and Fine Grained Traffic Monitoring in Open vSwitch*", ACM CoNEXT, Heidelberg, Germany, December, 2015.