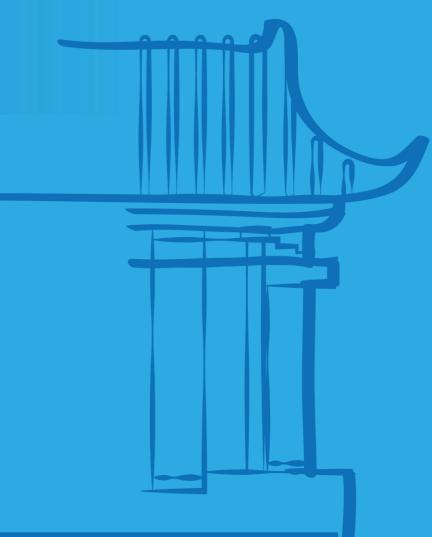# Optimizing Transport Protocols for Modern Data Center Networks

Prof. Minlan Yu

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Host: 陈宝权 教授
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Abstract

Datacenter applications increasingly rely on high throughput and low latency performance in the transport layer.

However, optimizing transport layer in data centers is challenging because it needs to work with ultra-low latency, high bandwidth, and large-scale networks. In this talk, we show that by leveraging recent advances in hardware, there are new opportunities to capture detailed information at hosts and switches for diagnosing and optimizing transport-layer performance. We give two examples in our work: First, we present DETER (NSDI'19), a deterministic replay tool that enables detailed packet-level information at hosts to help diagnose many TCP performance problems. Second, we present HPCC (SIGCOMM'19), a high-precision congestion control protocol, that leverages detailed queuing information at switches for optimizing RDMA performance.

Biography

Minlan Yu is an associate professor at Harvard School of Engineering and Applied Science. She received her B.A. in computer science and mathematics from Peking University in 2006 and her Ph.D in computer science from Princeton University in 2011. She received ACM SIGCOMM doctoral dissertation award in 2011, NSF CAREER award in 2015, and a bunch of Google, Facebook, VMWare faculty research awards.

She's actively looking for a few highly motivated strong Ph.D. students this year. Please come and talk to her if you are interested in applying for graduate school at Harvard.

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