

Yiyang Chang

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Education

Purdue University - Expect to graduate by July 2019	West Lafayette, IN
Ph.D. Candidate in Computer Engineering, ECE (GPA: 3.9/4.0)	Aug 2013 – Present
Peking University	Beijing, China
B.S. in Micro-electronics, EECS (GPA: 3.6/4.0)	Sept 2009 – July 2013

Research Experience

Network Performance SLOs Certification	Purdue, West Lafayette, IN
Advisors: Prof. Sanjay Rao and Prof. Mohit Tawarmalani	Oct 2015 – Present
<ul style="list-style-type: none">◦ Built a system for certifying network performance SLOs, under various types of failures◦ Built an SDN testbed emulating protection routing with Mininet and Open vSwitch.	
Scalable Distributed SDN Controller	Purdue, West Lafayette, IN
Advisors: Prof. Sanjay Rao and Prof. T. N. Vijaykumar	Nov 2014 – July 2015
<ul style="list-style-type: none">◦ Designed SDN controllers with functional partition instead of topological partition◦ Extended Floodlight SDN controller source code to measure performance	
App-specific Virtual Machine (VM) Selection in the Cloud	Purdue, West Lafayette, IN
Advisors: Prof. Sanjay Rao and Prof. T. S. Eugene Ng	Sept 2013 – Aug 2014
<ul style="list-style-type: none">◦ Cost-aware VM selection based on historical workload and online measurement◦ Investigated the root cause of performance variation on AWS EC2	

Industry Experience

Research Intern on Distributed Deep Learning Training System	Microsoft Research, Redmond, WA
Manager: Dr. Jin Li	May 2017 – Aug 2017
<ul style="list-style-type: none">◦ Prototyped a distributed deep learning training system over RDMA, accelerating a production-level model training speed by 6.5X◦ Contributed to TensorFlow open source project (#11416)	
SDE Intern on TCP Congestion Control	Microsoft, Redmond, WA
Manager: Praveen Balasubramanian	May 2016 – July 2016
<ul style="list-style-type: none">◦ Prototyped and shipped TCP CUBIC congestion control in Windows 10◦ Designed experiments to demonstrate throughput improvement in data transfer	
Research Intern on SDN-based Cloud Monitoring System	Huawei, Santa Clara, CA
Mentors: Dr. Shuo Yang and Dr. Haoyu Song	May 2014 – Aug 2014
<ul style="list-style-type: none">◦ Built an SDN-based cloud monitoring system with OpenStack, Ryu, and Ganglia◦ Implemented a physical SDN with Pica8 switches and Ryu controller	

Course Projects

Real-time Video Analysis System (C++)	ECE 673: Distributed Computing Systems (A+)
<ul style="list-style-type: none">◦ Designed and prototyped a real-time video analysis system based on MapReduce◦ Improved the video analysis accuracy by 25%, compared with state-of-the-art	
Linux Kernel Hacking (C)	ECE 695: Operating System (A)
<ul style="list-style-type: none">◦ Built a usage-limiting CPU scheduler based on Linux Complete Fair Scheduler◦ Visualized the memory page reference count in a Linux-ARM kernel	
Paxos and Reliable Multicast (C)	CS 505: Distributed System (A)
<ul style="list-style-type: none">◦ Implemented a Paxos-based replication protocol, a total-ordering multicast service, and Leslie Lamport's Byzantine Generals algorithm	

Selected Publication

- **Yiyang Chang**, Sanjay Rao, and Mohit Tawarmalani. "Robust Validation of Network Designs under Uncertain Demands and Failures", **NSDI**, 2017 (Acceptance rate: 46/253 = 18.2%).

Honors and Awards

Facebook Fellowship Finalist, Facebook Inc.	Jan 2018
Bilsland Dissertation Fellowship, Purdue University	Jan 2018
National Scholarship, Peking University	Dec 2012
Google Excellence Scholarship, Google Inc.	May 2012

Languages & Technical Skills

Python (proficient), C/C++, AWS, Kubernetes, SDN, TensorFlow, Gurobi, GAMS, Git, Vim