CHUAN JIANG

(765)337-0983 ⋄ jiang486@purdue.edu

EDUCATION

Purdue University   *Aug 2016 - Present*
Ph.D. in Computer Engineering, ECE
Research Assistant in Internet System Lab
Advisor: Professor Sanjay Rao

Shanghai Jiaotong University   *Aug 2012 - June 2016*
Bachelor of Science in Engineering
ACM Honored Class
Overall GPA: 86.5/100

RESEARCH EXPERIENCE

Designing Networks for SLOs   Feb 2020 - Present
Purdue University   *Advisor: Prof. Sanjay Rao and Prof. Mohit Tawarmalani*

- Developed a system for designing routing to ensure network performance SLOs for services.
- Adopted a decomposition technique to scale the system for larger networks.
- Implemented a testbed to emulate the proposed routing scheme using Mininet and Open vSwitch.

Designing Networks with Worst-case Guarantees   Dec 2018 - Aug 2020
Purdue University   *Advisor: Prof. Sanjay Rao and Prof. Mohit Tawarmalani*

- Proposed a hierarchy of novel resilient traffic routing schemes.
- Used formal optimization models to provide worst-case performance guarantee under network failures.
- Provided theoretical proofs on benefits over existing state-of-the-art schemes, and feasibility of implementation.

Proxy-Assisted Browsing in Cellular Networks   Dec 2016 - Oct 2017
Purdue University   *Advisor: Prof. Sanjay Rao*

- Evaluated proxy-based redundant execution for low latency mobile pages.
- Reduced work done at proxies.
- Experimented on pages and analyzed the throughput and latency results.

INDUSTRY EXPERIENCE

Software Development Engineer Intern   June 2019 - Aug 2019
Facebook   *Mentor: Dr. Ying Zhang*

- Built a set of tools to statistically analyze a system for processing network incidents.
- Improved the diagnosis of network incidents using statistical information
- Used machine learning techniques to enhance the incident diagnosis.

Software Development Engineer Intern   June 2018 - Aug 2018
Facebook   *Mentor: Dr. Dexter Cao*

- Designed and implemented a new dispatching pipeline to realize push-based collection for network monitoring tasks.

- Implemented locality preference to reduce latency for processing tasks, and implemented access control in the backend to avoid overloading.
- Shipped the new dispatching pipeline in production and improved the performance of the monitoring system.

Research Intern   Aug 2015 - Feb 2016
Microsoft Research Asia   *Advisor: Dr. Qiang Huo*

- Proposed and implemented an algorithm to perform stroke analysis for texts in images
- Used stroke analysis to identify text baselines in images in order to improve the precision of text recognition

RESEARCH INTERESTS

- Resilient routing with guaranteed performance.

- Network designs with optimization.

- Network incidents diagnosis.

PUBLICATIONS

- **Chuan Jiang**, Sanjay Rao, and Mohit Tawarmalani. "PCF: Provably Resilient Flexible Routing", pp. 139-153, **ACM SIGCOMM**, 2020. (Acceptance rate: 53/250 = 21.2%)

- Yiyang Chang, **Chuan Jiang**, Ashish Chandra, Sanjay Rao, Mohit Tawarmalani. "Lancet: Better network resilience by designing for pruned failure sets", pp.1-26, **ACM SIGMETRICS**, 2020. (Acceptance rate: 55/279 = 19.7%)

- Yanjun Wang, **Chuan Jiang**, Xiaokang Qiu, Sanjay G. Rao. "Learning Network Design Objectives Using A Program Synthesis Approach", pp. 69-76, **HotNets**, 2019. (Acceptance rate: 20/98 = 20.4%)

- Ashiwan Sivakumar, **Chuan Jiang**, Yun Seong Nam, Shankaranarayanan P N, Vijay Gopalakrishnan, Sanjay Rao, Subhabrata Sen, Mithuna Thottethodi, Vijaykumar T.N. "NutShell: Scalable Whittled Proxy Execution for Low-Latency Web over Cellular Networks", pp. 448–461, **ACM MOBICOM**, 2017. (Acceptance rate: 35/186 = 18.8%)

SKILLS

Computer Languages	C/C++, Python, Java
Database	MySQL
Tools	Gurobi, Matlab, OpenCV, OpenGL, Scikit-lear
SDN	Mininet, Open vSwitch

AWARDS AND RECOGNITIONS

- Anthony T. C. Gaw Fellowship, Purdue University   2021

- NSDI 2018 Travel Grant   2018

- Intern Award in Microsoft Research Asia   2015

- Undergraduate Excellence Scholarship of Shanghai Jiaotong University   2014