

Rahul Bothra

Department of Computer Science
University of Illinois at Urbana-Champaign

Email: bothra2@illinois.edu
Web: rahulbothra.com

Interests	Computer Networks and Systems, Machine Learning for Networked Systems, Distributed Systems	
Education	University of Illinois at Urbana-Champaign	2023 - 2028 (expected)
	Ph.D., Computer Science Advisor: P. Brighten Godfrey	
Industry Experience	Birla Institute of Technology and Science, Pilani	2016 - 2020
	B.E. (Honors), Computer Science	
Industry Experience	Research Fellow, Microsoft Research	Oct 2020 - July 2023
	Advisors: Venkat Padmanabhan , Ranjita Bhagwan Worked on improving resource efficiency of Microsoft Teams, as well as finding new ways to quantify the impact of network performance on user experience.	
	Advisor: Ramachandran Ramjee Identified and fixed inconsistent latency overheads in kernel calls during DL training communication frameworks. Identified ephemeral congestion in All Reduce patterns which could be alleviated by strategically modifying the ring topology.	
	Software Engineer, Microsoft	Dec 2019 - Oct 2020
Publications	Designed a distributed assessment tool as part of Azure Migrate to analyze application performance and requirements of large-scale customer datacenters.	
	Switchboard: Efficient Resource Management for Conferencing Services , SIGCOMM 2023 <i>Rahul Bothra, Rohan Gandhi, Ranjita Bhagwan, Venkata N. Padmanabhan, et. al.</i>	
	Don't Forget the User: It's Time to Rethink Network Measurements , HotNets 2023 <i>Rahul Bothra*</i> , <i>Aryan Taneja*</i> , <i>Ranjita Bhagwan, Venkata N. Padmanabhan, et. al.</i>	
Manuscripts in preparation	Diagnosing grey failures via micro-changes Systematically exploring minimal changes to the network to automatically debug network faults such as black-holes (as opposed to a manual ad-hoc method that is time consuming and unsafe) <i>Vipul Harsh, Rahul Bothra, P. Brighten Godfrey</i>	
	Computer-Aided Design of Network Architectures Reasoning Framework that captures nuances and constraints while deploying networked systems. <i>Rahul Bothra, Venkat Arun, Ahmed Saeed, Akshay Narayan</i>	
	Offloading Private WAN Traffic in Conferencing Services Data-driven offloading of network traffic from private WAN to the Internet. <i>Bhaskar Kataria, Palak LNU, Rahul Bothra, Venkata N. Padmanabhan et. al.</i>	
Projects	P4-TrafficTool	June 2020 - Oct 2020
	Advisor: Prof. Ben Leong P4-TrafficTool generates protocol and packet templates for popular frameworks like Scapy, MoonGen, Wireshark, etc. Added support in P4-Traffictool to handle more variations of P4 programs. Source .	
Awards	Hyperloop India, SpaceX Global Challenge	
	Designed and manufactured the <i>MagLev</i> system with Neodymium magnets for a Hyperloop prototype, and piloted at the SpaceX Global Challenge finals.	
Awards		
	<ul style="list-style-type: none">KVPY Fellowship, Department of Science and Technology, Government of IndiaNTSE Scholarship, NCERT Council, Government of India	

Teaching

- Teaching Assistant, Logic in Computer Science, BITS Pilani (Fall 2018, Fall 2019)
- Teaching Assistant, Computer Programming, BITS Pilani (Fall 2017, Spring 2017)