

Rahul Bothra

Department of Computer Science
University of Illinois at Urbana-Champaign

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

Education	University of Illinois at Urbana-Champaign Ph.D., Computer Science Advisor: P. Brighten Godfrey	2023 - 2028 (expected)
	Birla Institute of Technology and Science, Pilani B.E. (Honors), Computer Science	2016 - 2020
Industry Experience	Research Fellow, Microsoft Research 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.	Oct 2020 - July 2023
	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 Designed a distributed assessment tool as part of Azure Migrate to analyze application performance and requirements of large-scale customer datacenters.	Dec 2019 - Oct 2020
Publications	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*, Aryan Taneja*, 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 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 .	June 2020 - Oct 2020
	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.	July 2016 - June 2017
Awards	<ul style="list-style-type: none">• KVPY Fellowship, Department of Science and Technology, Government of India• NTSE Scholarship, NCERT Council, Government of India	
Teaching	<ul style="list-style-type: none">• Teaching Assistant, Logic in Computer Science, BITS Pilani (Fall 2018, Fall 2019)• Teaching Assistant, Computer Programming, BITS Pilani (Fall 2017, Spring 2017)	