

Rahul Bothra

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Education	University of Illinois, Urbana Champaign	2023 - Present
	Ph.D. in Computer Science	
	Birla Institute of Technology and Science, Pilani	2016 - 2019
	B.E. in Computer Science	
Experience	Research Fellow, Microsoft Research	2021 - 2023
	Advisors: Dr. Venkat Padmanabhan , Dr. Ranjita Bhagwan	
	Project: Optimizing resource efficiency for Microsoft Teams	
	<ul style="list-style-type: none">Designed peak-aware resource provisioning and allocation, with time-aware redundancies, which led to estimated cost savings of tens of millions of dollars annually.	
	Project: Network sensitivity of video conferencing applications	
	<ul style="list-style-type: none">Devised metrics of user engagement and analyzed their sensitivity to network performance. Identified applications in traffic engineering, congestion control, and server allocation techniques.	
	Advisors: Dr. Ramachandran Ramjee , Dr. Muthian Sivathanu	
	Project: Identifying communication bottlenecks in ML training	
	<ul style="list-style-type: none">Fixed issues in how DL communication frameworks interacted with kernel APIs, which were causing latency overheads.Reduced ephemeral congestion in All Reduce communication by strategically modifying the size and order of the ring topology.	
Projects	P4-TrafficTool	2020
	Advisor: Prof. Ben Leong , NUS Singapore	
	P4-TrafficTool generates protocol and packet templates for frameworks like Scapy, MoonGen, Wireshark, etc. Understood the p4c compiler pipeline and added support in P4-Traffictool to handle more variations of P4 programs. Source .	
	Google Summer of Code - Sugar Labs	2018
	Advisor: Walter Bender , Founder - MIT Media Lab	
	Improved the Sugar OS and built pedagogy applications on top of it. Source .	
	Hyperloop India, SpaceX Global Challenge	2017
	Designed and manufactured the <i>MagLev</i> system with Neodymium magnets for a Hyperloop prototype, and piloted at the SpaceX Global Challenge finals.	
Teaching Positions	Teaching Assistant, BITS Pilani	2017 - 2019
	Professors: Jagat Sesh., Sundaresan Raman. et. al. Courses: Logic in Computer Science (CS F211), and Programming (CS F111)	
Academic Honors	KVPY 2015 Fellowship by Dept. of Science and Technology, Govt of India	
	NTSE 2014 Scholarship by NCERT Council, Govt of India	