

DEEPAK GOUDA

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EDUCATION	Georgia Institute of Technology <i>Ph.D., Computer Science</i> Aug 2022 - Aug 2027 (<i>Expected</i>) <i>Master of Science, Computer Science</i> Aug 2022 - May 2024 Advisor : Dr. Cecilia Testart GPA: 4.0/4.0 Indian Institute of Technology, Guwahati <i>Bachelor of Technology</i> Jul 2016 - May 2020 Mathematics and Computing (Top 5%) GPA: 8.80/10.0
INTERESTS	Internet Routing, Routing Security, Content Delivery Networks, Internet Measurement
EXPERIENCE	Research Intern Team : Netflix Open Connect May 2026 - December 2026 - Developing a framework to perform near real-time detection of congestion in ISP networks using end-to-end measurements - Designed a system to initiate path measurements to localize the congestion events. Student Researcher Team : Google Global Networking June 2025 - September 2025 - Developed the specification for a next-generation route streaming protocol using gRPC and OpenConfig to provide richer, more efficient telemetry data than the industry-standard BMP - Designed and implemented the reference vendor protocol implementation on KNE, coordinating across internal teams and external vendors to define core requirements Research Intern Advisor : Romain Fontugne - Performed multi-dimensional analysis of Resource Public Key Infrastructure (RPKI) adoption among Autonomous Systems (AS) to identify key variables that drive the adoption of safe practices such as - AS topology, location and organization type - Evaluated effectiveness of Route Origin Validation (ROV) in promoting the adoption of RPKI among ASes, investigating its impact on Network Security Internet Initiative Japan June 2023 - July 2023
PUBLICATIONS	“Untangling AS Ownership with ASOIF”, Deepak Gouda, Sahil Samantaray, Nandakishore Velu, Cecilia Testart, ACM Internet Measurement Conference (IMC), 2026, <i>Under revision</i>. “Prefix2Org: Mapping BGP Prefixes to Organizations”, Deepak Gouda, Alberto Dainotti, Cecilia Testart, ACM Internet Measurement Conference (IMC), Madison, US, November, 2025. “ru-RPKI-ready: the Road Left to Full ROA Adoption”, Deepak Gouda, Romain Fontugne, Cecilia Testart, ACM Internet Measurement Conference (IMC), Madison, US, November, 2025. “Identifying Current Barriers in RPKI Adoption”, Cecilia Testart, Josephine Wolff, Deepak Gouda, Romain Fontugne, TPRC-52, Washington DC, September 2024 “On-Device Video Analysis with LLMs”, Vishnu Jaganathan, Deepak Gouda, Kriti Arora, Mohit Aggarwal, Chao Zhang, HOTMOBILE '24: 25th International Workshop on Mobile Computing Systems and Applications, San Diego, February 2024

	• “Parameter-free version of adaptive gradient methods for strongly-convex functions”, <u>Deepak Gouda</u>, Hassan Naveed, and Salil Kamath, arXiv:2306.06613, 2023 • “Design and Validation of BlockEval, A Blockchain Simulator”, <u>D. Gouda</u>, S. Jolly and K. Kapoor, International Conference on COMMunication Systems & NETworkS (COMSNETS), 2021, pp. 281-289 • “Construction of Confidence Interval for Stock Price Prediction with LSTMs”, De, S., Dey, A.K. & <u>Gouda, Deepak</u>, Annals of Data Science., 9, 271–284 (2022)																
POSTERS	• “Poster: Using RPKI to Map Autonomous Systems to Their Management Organization”, <u>Deepak Gouda</u>, Cecilia Testart, ACM SIGCOMM, Coimbra, Portugal, September, 2025. • “Poster: Diverging Branches - How different are RPKI Trees across RIRs?”, <u>Deepak Gouda</u>, Cecilia Testart, ACM Internet Measurement Conference (IMC), Madrid, Spain, November, 2024.																
TALKS	• “Are you RPKI Ready? The Road Left to Full ROA Adoption”, ACM IMC 2025; IETF-125, 2026 • “Prefix2Org : Mapping BGP Prefixes to Organizations”, ACM IMC 2025; Google Routing Security Seminar (Internal), 2025 • “On Centralization of IP Layer”, Pulse Internet Measurement Forum, Dec 2025 • “Inferring ROV Policies using Internet Yellow Pages and Ark”, GMI-AIMS Workshop, CAIDA, Feb, 2025 • “Understanding the Mirai Botnet”, CS 8803-Securing Internet Infrastructure, Georgia Tech, Aug, 2024 • “Decoding Barriers : Identifying Disparities in Routing Security Adoption”, Technology, Data, and Policy Conference, MIT, June, 2024																
PROJECTS	Analyzing Concentration of IP Address Space: (2025-Present) • Goal: To identify the consolidation of the Internet’s routing infrastructure that may lead to single points of failure with potential country-wide impact • Leveraged <i>Prefix2Org</i> dataset to quantify the consolidation of Internet resources among organizations within each country • Used statistical and empirical analysis to measure the concentration of routed prefixes and RPKI adoption among dominant organizations, revealing monopolistic structures impacting more than 15 countries in Africa and 5 in the Middle East • Currently estimating the population potentially affected by the outage of a single organization to assess systemic risks to Internet accessibility and resilience worldwide																
KEYWORDS & SKILLS	Languages: C++, Python, MATLAB, Bash, L^AT_EX. Data: Scikit, Numpy, Pandas, Plotly, SQL, Monte Carlo Simulations AI: PyTorch, Transformers, LLMs Networks: Systems, Security, TCP/IP, UDP, BGP, DNS, Routing Miscellaneous: Airflow, Git, Debian, Linux, Docker																
KEY COURSES	Computer Networks : Network Security, Advanced Computer Networks, Internet Data Science, Securing Internet Infrastructure, Data Communication Machine Learning : Deep Learning for Text, Big Data Systems, Online Convex Optimization, Statistical Machine Learning, Advanced Linear Algebra																
ACHIEVEMENTS	<table> <tr> <td>Pulse Research Fellowship (17,000 USD)</td><td><i>Internet Society, 2025</i></td></tr> <tr> <td>Student Travel Grant</td><td><i>ACM IMC, 2023, 2024</i></td></tr> <tr> <td>Student Travel Grant (One of 8 students)</td><td><i>ACM HotNets, 2022</i></td></tr> <tr> <td>Founding member of InfoSecIITG, ranked 298 globally</td><td><i>IIT Guwahati, 2020</i></td></tr> <tr> <td>1st runner in coding hackathon</td><td><i>Microsoft CodeFunDo++, 2018</i></td></tr> <tr> <td>Top 20 among 2700+ teams in Data Science Hackathon</td><td><i>American Express, 2018</i></td></tr> <tr> <td>1st position in Robotics Exposition, Dept. of Defense, India</td><td><i>DRDO, 2017</i></td></tr> <tr> <td>99.2 percentile from 200,000 applicants</td><td><i>JEE Advanced, 2016</i></td></tr> </table>	Pulse Research Fellowship (17,000 USD)	<i>Internet Society, 2025</i>	Student Travel Grant	<i>ACM IMC, 2023, 2024</i>	Student Travel Grant (One of 8 students)	<i>ACM HotNets, 2022</i>	Founding member of InfoSecIITG, ranked 298 globally	<i>IIT Guwahati, 2020</i>	1st runner in coding hackathon	<i>Microsoft CodeFunDo++, 2018</i>	Top 20 among 2700+ teams in Data Science Hackathon	<i>American Express, 2018</i>	1st position in Robotics Exposition, Dept. of Defense, India	<i>DRDO, 2017</i>	99.2 percentile from 200,000 applicants	<i>JEE Advanced, 2016</i>
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JEE Mains, 2016

SERVICES

Shadow TPC, *ACM IMC 2026*

Artifact Evaluation Committee, *ACM CoNEXT 2023, 2024, 2026*

Teaching Assistant, Advanced Computer Networking (Spring 2024)

Teaching Assistant, Securing Internet Infrastructure (Fall 2023, Fall 2024)

ACM Professional Member (2023)

Volunteer, EECS Rising Stars (2023)

Mentor, Placement Committee, IIT, Guwahati (2020)

National Service Scheme, IIT, Guwahati (2017-2020)

MENTORING

- Agam Saraf (MS 202X)
- Abhishek Dharmadhikari (MS 202X)
- Bhawna Kumari (MS 202X)
- Sahil Samantaray (MS 2026)
- Nandakishore Velu (MS 2026)
- Siddharth Prabhu (MS 2025)
- Tanish Rastogi (MS 2023)