

Devashish Gosain

India
9868724658
devashishg@iiitd.ac.in

Education

- 2015–2020 **PhD, IIIT-Delhi**, India.
CGPA: 10
- 2013-2015 **Master of Technology**, *Birla Institute of Technology*, Ranchi, India.
CGPA: 8.6
- 2008-2012 **Bachelor of Technology**, *Guru Gobind Singh Indraprastha University*, Delhi, India.
Score: 76%

Research Interests

Networks and Security.
Distributed Systems.

Selected Publications

- 2020 **SiegeBreaker: An SDN Based Practical Decoy Routing System**, *accepted for the publication in Proceedings on Privacy Enhancing Technologies (PETS)*.
Authors: Piyush Kumar Sharma, **Devashish Gosain**, Himanshu Sagar, Chaitanya Kumar, Aneesh Dogra, Vinayak Naik, H.B. Acharya, Sambuddho Chakravarty
- 2019 **CAMP: cluster aided multi-path routing protocol for wireless sensor networks**, *accepted for the publication in Wireless Networks, Springer*.
Authors: Mohit Sajwan, **Devashish Gosain**, Ajay. K. Sharma
- 2018 **Where The Light Gets In: Analyzing Web Censorship Mechanisms in India**, *accepted for the publication in proceedings of Internet Measurement Conference (IMC)*.
Authors: Tarun Kumar Yadav*, Akshat Sinha*, **Devashish Gosain***, Piyush Sharma, Sambuddho Chakravarty. (*All authors have equal contributions.)
- 2018 **Hybrid energy-efficient multi-path routing for wireless sensor networks**, *accepted for the publication in Journal of Computers and Electrical Engineering, Elsevier*.
Authors: Mohit Sajwan, **Devashish Gosain**, Ajay. K. Sharma
- 2017 **The Devil's in The Details: Placing Decoy Routers in the Internet**, *accepted for the publication in proceedings of Annual Computer Security Applications Conference (ACSAC)*.
Authors: **Devashish Gosain**, Anshika Aggarwal, H. B. Acharya and Sambuddho Chakravarty
- 2017 **Mending Wall: On the Implementation of Censorship in India (Best Student Paper)**, *accepted for the publication in proceedings of EAI International Conference on Security and Privacy in Communication Networks (SECURECOMM)*.
Authors: **Devashish Gosain**, Anshika Aggarwal, Sahil Shekhawat, H. B. Acharya and Sambuddho Chakravarty

- 2017 **Few Throats to Choke: On the Current Structure of the Internet**, *accepted for the publication in proceedings of Local Computer Networks (LCN)*.
 Authors: H. B. Acharya*, Sambuddho Chakravarty* and **Devashish Gosain***. (*All authors have equal contributions.)
- 2017 **DSERR: Delay Sensitive Energy Efficient Reliable Routing Algorithm for wireless sensor networks**, *accepted for the publication in Wireless Personal Communication (WPC), Springer*.
 Authors: **Devashish Gosain**, Itu Snigdha, Mohit Sajwan
- 2016 **Analysis of scalability for routing protocols in wireless sensor networks**, *Optik-International Journal for Light and Electron Optics, Elsevier*.
 Authors: **Devashish Gosain**, Itu Snigdha
- 2016 **Optimal sink placement in backbone assisted wireless sensor networks**, *Egyptian Informatics Journal, Elsevier*.
 Authors: Itu Snigdha, **Devashish Gosain**, Nisha Gupta
- 2015 **Energy Analysis for Trajectory based Sink Mobility in WSN**, *Procedia Computer Science, Elsevier*.
 Authors: Itu Snigdha, **Devashish Gosain**
- 2015 **Performance Comparison of Routing Protocols in Bipartite Wireless Sensor Network**, *International Journal of Electrical and Computer Engineering*.
 Authors: **Devashish Gosain**, Itu Snigdha

Selected Research Projects

Internet Cartography and Censorship.

Analyzed how inferences drawn from Internet maps can be used to aid (Anti-)censorship? Constructed map of the Internet and analyzed major players who control it; what impact does it have on censorship?

Maginot Lines and Tourniquets : On the Defendability of National Cyberspace.

Studied the problem of constructing a nation-wide Line of Defense. Identified a few network locations that can serve as a cordon to monitor and filter cyber attacks, for the entire nation.

Telemetron: Measuring Network Capacity Between Off-Path Remote Hosts.

Developed a novel tool to estimate bandwidth between off-path remote hosts on the Internet. It achieved $\approx 92\%$ accuracy against ground truth.

Constraint Minimization Techniques for Wireless Sensor Networks (WSNs).

Proposed a new scheme Quasi-Random Deployment, to place sensors in the field with a novel approach to place sink in backbone assisted WSNs. Developed a new routing protocol which minimizes energy costs and delays.

Research Internships

Sept. 2019 - **Visiting Scholar**, *Brigham Young University, Utah, USA*.

Dec. 2019 **Automatic Detection and Prevention of Fake Key Attacks in Secure Messaging.**

Popular IM applications e.g., WhatsApp provide end-to-end encryption for billions of users. Designed several defenses for fake key attacks and use a threat analysis to identify which attacks each defense can automatically detect or prevent.

Skills

Programming Languages.

C, C++, Java, Python, dotNet, Matlab

Web Technologies.

HTML, CSS, JavaScript

Simulators.

Prowler, Qualnet, C-BGP, Omnet++, NS3

Invited Talks

Feb. 2020 **Internet Maps and Censorship**, *COSIC, KU Leuven*, Belgium.

Teaching Assistant

Secure Coding

Network Security

Scientific Communication

Software Defined Networks

Security Engineering

Languages

Hindi Native

English Proficient

References

Dr. Sambuddho Chakravarty (PhD Advisor), IIIT-Delhi

Dr. H.B. Acharya, Rochester Institute of Technology, NY, USA

Dr. Kent Seamons, Brigham Young University, Utah, USA

Dr. Daniel Zappala, Brigham Young University, Utah, USA