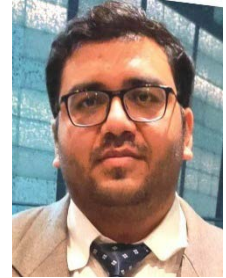


DR. GAURAV KHANNA

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RESEARCH INTERESTS

I am broadly interested in **Computer & Communication Network Reliability Engineering**. In particular, I have spent the last few years in applying the concepts of Graph Theory and Reliability Engineering for Topology Modelling and Reliability Analysis of Time Varying Communication Networks (TVCNs), *e.g.*, Mobile Ad hoc and Sensor Networks, Vehicular Ad hoc Networks (VANETs) and Delay Tolerant Networks (DTNs), whose topology varies as a function of time. Besides, I am also interested in the design and performance analysis of Next Generation Networks and new layouts of Multistage Interconnection Networks.

EDUCATION

- **Ph. D.** July 2015 – March 2021
IIT Kharagpur, India and Curtin University, Australia (Dual Doctoral Degree)
Specialization: Reliability Engineering and Computing
Thesis Title: Modelling and Reliability Evaluation of Time Varying Communication Networks.
Advisors: Prof. Sanjay K. Chaturvedi, Dr. Sieteng Soh and A/Prof. Mihai Lazarescu
- **M. Tech. ICT** August 2013 – May 2015
Gautam Buddha University, India
Specialization: Wireless Communication and Networks
Thesis Title: Reliability Evaluation of Multistage Interconnection Networks.
Advisor: Dr. Rajesh Mishra
- **B. Tech.** August 2007 – July 2011
Gautam Buddh Technical University, India
Specialization: Electronics & Communication Engineering

EMPLOYMENT

- **Assistant Professor** in the Department of Electronics & Communication Engineering, Jaypee Institute of Information Technology, Noida, India December 2021 – To Date
- **Assistant Professor** in the School of Computer Science, University of Petroleum and Energy Studies, Dehradun, India August 2021 – December 2021

- **Research Scholar and Teaching Assistant** at IIT Kharagpur July 2015 – February 2021
- **Research Scholar** at Curtin University, Australia October 2018 – February 2021
- **Lecturer** in the Department of Electronics & Communication Engineering, Shree Bankey Bihari Institute of Technology, Meerut February 2013 – July 2013
- **Assistant Professor** in the Department of Electronics & Communication Engineering, IFTM University, Moradabad August 2011 – February 2013

SUMMARY OF TEACHING EXPERIENCE

- At present, I am teaching **Reliability Analysis and Prediction** to the undergraduate students at **Jaypee Institute of Information Technology** (August 2022 – To Date).
- Prior to the Ph. D., I have a teaching experience of 1 year and 11 months [Taught undergraduate students at **IFTM University**, Moradabad (August 2011 – February 2013) and **Shree Bankey Bihari Institute of Technology**, Meerut (February 2013 – July 2013)].
- While I was associated with IFTM University and Shree Bankey Bihari Institute of Technology, I taught 03 subjects, *viz.*, **Basic Electronics Engineering**, **Optical Fiber Communication** and **Microwave Engineering**, of 04 credits each.
- I was also nominated as the external practical examiner for the above subjects by Gautam Buddh Technical University and Mahamaya Technical University, 2012 – 2013.
- I also represented Shree Bankey Bihari Institute of Technology in the external University examinations, 2013.
- During Ph.D. (2015 – 2021), I also served as a Teaching Assistant for a number of courses like Reliability Analysis and Prediction at IIT Kharagpur.
- As a Teaching Assistant, I was responsible for assisting my supervisor in taking tutorials, discussing assignment doubts and preparing lecture slides. I also participated actively in miscellaneous academic activities, *e.g.*, invigilation in examinations.
- The above mentioned responsibilities gave me an opportunity to work with over two hundred students of diversified background.

HONORS AND AWARDS

- Honorary Rosalind Member of London Journals Press – (Membership ID: #BA89152) 2020
- Curtin International Postgraduate Research Scholarship (CIPRS) 2019
- Certificate for being in top 1% and successfully completing the course – Total Quality Management-1 from NPTEL 2017
- Ph. D. research programme “Regular with Assistantship” of IIT Kharagpur 2015
- Certificate for having 28th city rank in the 6th National Science Olympiad 2003

RESEARCH VISITS

- Curtin University, Perth, Australia January 2019 – December 2019
Host: Dr. Sieteng Soh

SUBJECTS OF INTEREST

- Wireless Ad hoc & Sensor Networks
- Reliability Analysis & Prediction
- Wireless Network Security
- Mobile Computing

PUBLICATIONS

Transactions/Journal Publications

- [1] Gaurav Khanna, Sanjay K. Chaturvedi, and M. Othman, On design and performance analysis of improved shuffle exchange gamma interconnection network layouts. *J Supercomput* (2022). <https://doi.org/10.1007/s11227-022-04735-6> [**SCI, I.F. 2.557**].
- [2] Gaurav Khanna, Sieteng Soh, S. K. Chaturvedi, and Kwan-Wu Chin, On Enumeration of Spanning Arborescences and Reliability for Network Broadcast in Fixed-Schedule Dynamic Networks. *IEEE Trans. on Network Science and Engineering*, 7(4) (2020): 2980-2996 [**SCIE, I.F. 3.894**].
- [3] Gaurav Khanna, S. K. Chaturvedi and Sieteng Soh, Two-Terminal Reliability Analysis for Time-Evolving and Predictable Delay-Tolerant Networks, *Recent Advances in Electrical & Electronic Engineering*, 13(2) (2020): 236-250 [**Scopus, ESCI**].
- [4] Gaurav Khanna, S. K. Chaturvedi and Sieteng Soh, On Computing the Reliability of Opportunistic Multi-Hop Networks with Mobile Relays, *Quality and Reliability Engineering International*, 35(4), (2019): 870-88 [**SCIE, I.F. 2.885**].
- [5] Gaurav Khanna, S. K. Chaturvedi and Sieteng Soh, Reliability Evaluation of Mobile Ad Hoc Networks by Considering Link Expiration Time and Border Time, *International Journal of System Assurance Engineering and Management*, 10(3), (2019): 399-415 [**Scopus, ESCI**].
- [6] S. K. Chaturvedi, Gaurav Khanna and Sieteng Soh, Reliability Evaluation of Time Evolving Delay Tolerant Networks based on Sum-of-Disjoint Products, *Reliability Engineering and system safety*, 171, (2018): 136-151 [**SCI, I.F. 6.188**].
- [7] Gaurav Khanna and S. K. Chaturvedi, A Comprehensive Survey on Multi-Hop Wireless Networks: Milestones, Changing Trends and Concomitant Challenges, *Wireless Personal Communications*, 101(2), (2018): 677-722 [**SCIE, I.F. 1.671**].
- [8] Gaurav Khanna, Rajesh Mishra and S. K. Chaturvedi, Design of Fault Tolerant Shuffle Exchange Gamma Interconnection Network Layouts. *Journal of Interconnection Networks*, 17(02), (2017): 1750005 [**Scopus, ESCI**].
- [9] Gaurav Khanna, Rajesh Mishra and S. K. Chaturvedi, 4DGIN-3: A new design layout of 4-disjoint gamma interconnection network. *Journal of Parallel and Distributed Computing*, 98, (2016): 40-7 [**SCI, I.F. 3.734**].

Book Chapters

- [1] Gaurav Khanna, Modified MIP: A Versatile Search Procedure for Optimal Redundancy Allocation, in *Frontiers of Performability Engineering - In honor of Prof. K. B. Misra on his 80th Birthday*, Dr. Durga R. Karanki, Eds. Springer, 2022 [**accepted, under process**].
- [2] S. K. Chaturvedi, Sieteng Soh and Gaurav Khanna, On Modelling and Performability Evaluation of Time Varying Communication Networks, in *Handbook of Advanced Performability Engineering*, K. B. Misra, Eds. Springer, 2021, pp. 161-189.
- [3] Gaurav Khanna, S. K. Chaturvedi and Sieteng Soh, Time Varying Communication Networks: Modelling, Reliability Evaluation and Optimization, in *Advances in Reliability Analysis and its Applications*, M. Ram and H. Pham, Eds. Cham: Springer International Publishing, 2020, pp. 1-30.

Conference Papers

- [1] Gaurav Khanna and Rajesh Mishra, *Comparative Study of Reliability Evaluation Techniques In Shuffle Exchange Networks*, International Conference on Academic Research in Engineering, Management and Information Technology, MJPRU Bareilly, February 21-23, 2015.
- [2] Gaurav Khanna, Sushmita Pandey, Asha Kushwaha, Rehnuma Gour, and Srijan Purang, *Algorithms and Approaches for Multicast Traffic Routing in Heterogeneous Networks*, International Conference on Contemporary Challenges in Management, Technology and Social Sciences, Society of Engineering & Management Sciences (SEMS), April 5, 2014.

PROFESSIONAL TRAINING

- Course on Total Quality Management – I
(8 Week course by NPTEL, August – October, 2017)
- Special Lecture by Prof. P. K. Ray on Quality Engineering
(Subir Chowdhury School of Quality & Reliability, IIT Kharagpur, May 11–13, 2017)
- Workshop on “Fuzzy Sets and Fuzzy Logic in Informatics”
(Reliability Engineering Centre, IIT Kharagpur, January 29, 2016)
- Industrial Training at Electrical Maintenance Section
(Ordnance Equipment Factory, Kanpur, June 10 – July 07, 2010)

PROFESSIONAL SERVICE

Technical Program Committee Member: ISPCC2k21 and ICRTDSI-2022

Peer-Reviewed Articles for:

- Reliability Engineering & System Safety.
- The Journal of Supercomputing.
- International Journal of Sensors, Wireless Communications and Control.
- Journal of Vibroengineering.

- Mathematical Problems in Engineering.
- International Journal of Performability Engineering.
- Indonesian Journal of Electrical Engineering and Computer Science.
- International Journal of Reliability and Safety.

LANGUAGES

Hindi (Native Language) and English

COMPUTER SKILLS

Operating Systems: Windows all versions, Ubuntu

Platforms: MATLAB

Software Tools: MS Office, Cisco Packet Tracer

EXTRA-CURRICULAR ACTIVITIES

- Academic representative of my class during B. Tech. (2007–11) and M. Tech. (2013–2015).
- House captain of my School (2005–2006) HMS, Kanpur.

REFERENCES

Prof. Sanjay K. Chaturvedi

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DECLARATION

I hereby declare that the information given above is true in every respect to the best of my knowledge and I bear the responsibility for the correctness of above mentioned particulars.

Place: Noida, U.P., India

Date: 15/08/2022

Gaurav Khanna