

GAURANG BANSAL

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Links: [Webpage](#), [Scholar](#), [Github](#)

WORKSHOP Publicity & Session Chair, **IEEE INFOCOM Workshop, 2022**
ORGANISED/CHAIR Publicity & Session Chair, **IEEE Globecom Workshop, 2021**

POSITION OF RESPONSIBILITIES Technical Program Committee, **IEEE INFOCOM Workshop 2022**
Technical Program Committee, **IEEE Globecom Workshop 2021**
Technical Program Committee, **IEEE ICI Conference, 2022**
Web Editor, **XRDS Magazine, ACM**

RESEARCH AWARDS Distinguished Scientist Fellow, **King Saud University**
Best Scholar Award, **International Research Awards on Science, Health and Engineering**
President Graduate Fellow 2020, **National University of Singapore (NUS)**

EDUCATION **National University of Singapore (NUS)**; Singapore 2020-
PhD Scholar, Department of Electrical & Computer Engineering
PhD Advisor: [Biplab Sikdar](#)
Topic: Security Solutions for Communication in UAV Swarms

Birla Institute of Technology and Science, Pilani; Pilani, India 2018-2020
M.E. Computer Science GPA: 9.36/10
Thesis Advisors: [Vinay Chamola](#), [K. Hari Babu](#)
Thesis: OnChip Security Mechanism for IoT Communication

Birla Institute of Technology and Science, Pilani; Pilani, India 2014-2018
B.E. Computer Science GPA: 8.1/10
Thesis Advisor: [Sundaresan Raman](#)
Thesis: Residual Network Feature Engineering for Image Classification

PROFESSIONAL EXPERIENCE Web Developer, NUS Graduate School, Singapore
Research Mentor, [IoT Lab](#), BITS Pilani
STEM Ambassador, United Kingdom
Software Developer, BHEL Pvt. Ltd
Android Developer, Auribises Technologies Pvt. Ltd

MAGAZINE PUBLICATIONS [G. Bansal](#), V. Chamola, B. Sikdar, N. Ansari **“Scalable Topologies for Time-Optimal Authentication of UAV Swarms”**. IEEE Network Magazine (Review). **Impact Factor : 10.6**

[G. Bansal](#), V. Chamola, A. Jolfaei, S. Mumtaz **“Cracking the Dark Web: Attacks in Tor Network”**. IEEE Network Magazine (Review). **Impact Factor : 10.6**

[G. Bansal](#), B. Sikdar “**Noise-Resilient Authentication Protocol for Unmanned Aerial Networks**”. IEEE Transactions on Industrial Informatics (Review). **Impact Factor : 10.2**

[G. Bansal](#), B.Sikdar “**Location Aware Clustering: Scalable Authentication Protocol for UAV Swarms**”. IEEE Networking Letter.

[G. Bansal](#), B.Sikdar “**S-MAPS: Scalable Mutual Authentication Protocol for Dynamic UAV Swarms**”. IEEE Transactions on Vehicular Technology . **Impact Factor : 5.3**

[G. Bansal](#), A. Tyagi, V. Chamola, M. Guizani “**PUF Based Fault Tolerant Authentication Protocol for Vehicle to Smart Grid Communications**”. IEEE Transactions on Vehicular Technology (Review). **Impact Factor : 5.3**

[G. Bansal](#), Naren, V. Chamola, B. Sikdar “**SHOTS: Scalable Secure Hardware Based Authentication-Attestation Protocol Using Optimal Trajectory in UAV Swarms**”. IEEE Transactions on Vehicular Technology (Review). **Impact Factor : 5.3**

[G. Bansal](#), Naren, V. Chamola, B. Sikdar, N. Kumar, M. Guizani “**Lightweight Mutual Authentication Protocol for V2G Using Physical Unclonable Function**”. IEEE Transactions on Vehicular Technology. **Impact Factor : 5.3**

T Alladi, Naren, [G. Bansal](#), V. Chamola, M. Guizani “**SecAuthUAV: A Novel Authentication Scheme for UAV-Base Station Scenario**”. IEEE Transactions on Vehicular Technology. **Impact Factor : 5.3**

V Hassija, [G. Bansal](#), V Chamola, N Kumar, M Guizani “**Secure Lending: Blockchain and Prospect Theory-Based Decentralized Credit Scoring Model**”. IEEE Transactions on Network Science and Engineering Journal **Impact Factor : 5.2**

[G. Bansal](#), B.Sikdar “**UAV SECaaS: Game-Theoretic Formulation for Security as a service in UAV Swarms**”. IEEE Systems Journal. **Impact Factor : 3.931**

[G. Bansal](#), V. Chamola, G. Kaddom, Md. J. Piran, and M. Alrashoud “**Next Generation Stock Exchange: Recurrent Neural Learning Model for Distributed Ledger Transactions**”. Elsevier Computer Networks. **Impact Factor : 3.11**

[G. Bansal](#), V. Chamola, P. Narang, S. Kumar, S. Raman “**Deep3DSCan: Deep Residual Network And Morphological Descriptor Based Framework for Lung Cancer Classification And 3D Segmentation**”. IET Image Processing **Impact Factor : 2.61**

[G. Bansal](#), V. Hassija, V. Chamola, N. Kumar and M. Guizani “**Smart Stock Exchange Market: A Secure Predictive Decentralised Mode**”, In **IEEE GLOBE-COM 2019** - 2019 IEEE Global Communications Conference, Waikoloa, USA, 2019. **[Rank: A]**

[G. Bansal](#), B. Sikdar “**Fault Resilient Authentication Architecture for Drone Networks**”, **IEEE Conference on Communication (ICC), 2022** (Review). **[Rank: A]**

[G. Bansal](#), B. Sikdar “**Security Service Pricing Model for UAV Swarms: A**

Stackelberg Game Approach", In DroneCom, **IEEE INFOCOM Wrks 2021**.
[Rank: A*]

G. Bansal, V. Chamola **"Lightweight Authentication Protocol for Inter Base Station Communication in Heterogeneous Networks"**, In BlockSecSDN, **IEEE INFOCOM Wrks 2020**. [Rank: A*]

G. Bansal, B. Sikdar **"A Secure and Efficient Mutual Authentication Protocol Framework for Unmanned Aerial Vehicles"**, In **IEEE Globecom Wrks 2021**. [Rank: A]

G. Bansal, A. Dua, G. S. Auja, M. Singh and N. Kumar **"SmartChain: Smart & Scalable Blockchain Consortium for Smart Grid Systems"**, In 2019 IEEE International Conference on Communications (**ICC Wrks 2019**). IEEE, Shanghai, China, 2019. [Rank: A]

V. Hassija*, G. Bansal*, V. Chamola, V. Saxena and B. Sikdar **"BlockCom: A Blockchain Based Commerce Model for Smart Communities using Auction Mechanism"**, In 2019 IEEE International Conference on Communications (**ICC Wrks 2019**). IEEE, Shanghai, China, 2019. [Rank: A]

G. Bansal, A. Tyagi, V. Narayanan, V. Chamola **"Hardware Testbed based Analytical Performance Modelling for Mobile Task Offloading in UAV Edge Cloudlets"**, **IEEE Conference on Vehicular Technology (VTC) Fall Wrks 2021**.

G. Bansal, Naren, V. Chamola. **"RAMA: Real-Time Automobile Mutual Authentication Protocol Using PUF"**, Proceedings of 34th Conference on International Conference on Information Networking (**ICOIN 2020**), Barcelona, Spain 2020.

G. Bansal, A. Bhatia. **"Fast, Secure and Distributed Consensus Mechanism for Energy Trading Among Vehicles using Hashgraph"**, Proceedings of 34th Conference on International Conference on Information Networking (**ICOIN 2020**), Barcelona, Spain 2020.

S Kumar, G. Bansal, V S Shekhawat. **"A Machine Learning Approach for Traffic Flow Provisioning in Software Defined Networks"**, Proceedings of 34th Conference on International Conference on Information Networking (**ICOIN 2020**), Barcelona, Spain 2020.

PROJECTS & GRANTS

Title: Artificial Intelligence and Blockchain Enabled Secure and Scalable Framework for Online Healthcare Applications

Agency: ASEAN-India ST Development Fund (AISTDF), Department of Science and Technology, Government of India

Funds: INR 35,00,000

Duration: 2021-2023

Role: Student-PI

Title: Internet Engineering Task Force (IETF) Student Grant

Agency: Internet Engineering Task Force (IETF)

Funds: INR 50,000

Duration: 2021

Title: Latency Aware Mobile Task Assignment and Load Balancing for Edge Cloudlets

Agency: Department of Electrical & Electronics Engineering, BITS Pilani
Funds: INR 10,000
Duration: 2017
Role: PI

REVIEWER	IEEE Internet of Things Magazine IEEE Internet of Things Journal (IF 11.705) IEEE Transactions on Industrial Informatics (IF 9.1) IEEE Transactions on Vehicular Technology (IF 5.3) IEEE Systems Journal (IF 3.98) IEEE Networking Letters IEEE INFOCOM [Rank: A*] IEEE ICC Conference [Rank: A] IEEE Globecom Conference [Rank: A] Complex Intelligent Systems, Springer (IF 3.791) Future Generation Computing Systems, Elsevier (IF 5.7) Computers in Biology and Medicine, Elsevier (IF 4.589) Computer Communications, Elsevier (IF 2.81) Ad Hoc Networks, Elsevier (IF 3.6) IET Intelligent Transportation System (IF 2.48) IET Image Processing (IF 1.8)
COURSES TAUGHT	Computer Networks, National University of Singapore Computer Programming, National University of Singapore Internet of Things, BITS Pilani Cryptography, BITS Pilani Machine Learning, BITS Pilani Software for Embedded Systems, BITS Pilani
SKILLS	Programming Languages: Python, C, C++, HTML/CSS, MatLab Tools and Systems: Wordpress, Elementor, TensorFlow/Pytorch,, Linux, Git
MEMBERSHIP	Eta Kappa Nu Member Internet Engineering Task Force (IETF) Member IEEE Young Professional Association of Computer Machinery (ACM) Member IEEE Sensors Council Member IEEE Systems Council Member
HONORS AND AWARDS	<ul style="list-style-type: none">• Winners for Prototype Project Development, APOGEE 2018• Secured AIR 1 in Mathematical Olympiad 2013• Kishore Vaigyanik Protsahan Yojana (KVPY) Fellow (AIR 620)• Secured (top 0.6%) in GATE 2018 CSIT.• Secured 2972 rank (top 0.6%) in IIT-JEE• Secured 2966 rank (top 0.7%) in IIT-Mains