

## DR.ABHINAV BHANDARI

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**Permanent Address:** 142, New Friends Enclave, Opp.Urban Estate Phase-2, By Pass Road, Patiala (147002), Punjab (India)

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Google Scholar ID Scopus ID ORCID ID Research Gate



## PRESENT OCCUPATION

Working as an Assistant Professor in the Department of Computer Science & Engineering, Punjabi University, Patiala, Punjab (India) since 6<sup>th</sup> January 2012

## PROFESSIONAL SERVICE( Above 21 YEARS )

- On study leave for pursuing Ph.D. in Dr. B.R Ambedkar National Institute of Technology, Jalandhar, Punjab(India) from 26th July 2010 to 3rd Jan 2012 as a regular research scholar.
- Worked as an Assistant Professor from 7th April 2008 to 5th Jan 2012 in Lalal Lajpat Rai Institute of Engineering and Technology, Moga, affiliated to Punjab Technical University, Kapurthala, Punjab (India).
- Worked as a Lecturer from 7<sup>th</sup> August 2001 to 6<sup>th</sup> April 2008 in Lala Lajpat Rai Institute of Engineering and Technology Moga, Punjab(India), affiliated to Punjab Technical University, Kapurthala, Punjab (India).

## ACADEMIC DETAILS

Degree	Institute	Board/University	Year	CPG/%
Ph.D.	Dr. B. R Ambedkar, NIT Jalandhar, Punjab (India)	Deemed University( <b>Institute of National Importance</b> )	2017	9 CGP in course work
M.Tech(CSE)	D.A.V.I.E.T. Jalandhar, Punjab (India)	Punjab Technical University, Jalandhar, Punjab (India)	2008	77.76%
B.Tech(CSE)	G.T.B.K.I.E.T , Malout, Punjab (India)	Punjab Technical University, Jalandhar, Punjab (India)	1997-2001	63.76%
10 <sup>th</sup>	D.N.Model School, Moga, Punjab (India)	C.B.S.E, New Delhi (India)	1995	78.2%

## AREAS OF INTEREST, EXPERTISE AND CURRENT RESEARCH

Network Security, DDoS Attack Defense Mechanism, Software Defined Networks.

## Brief Research Work done during Ph.D.

The title of my Ph.D Dissertation was "A Mitigation framework against Flooding based Distributed Denial of Service Attacks". As we know, In the real world, all internet based services are designed to promote unhindered data flow to provide plethora of services and information even in the case of increased data traffic

through open Internet architecture which is exploited by the malicious attackers. They design a devastating DDoS attack on the victim. There is a strong need to distinguish the genuine data traffic from the hostile activity at the earliest to allow the genuine data flow unhindered while prosecuting the malicious attack with minimum collateral damage. This problem has been involved with various challenges at different stages. The proposed mitigation framework detect, characterize and mitigate the flooding based DDoS attacks. The research work has been validated using various existing data sets. Few simulated experiments has also been designed to validate the efficacy and accuracy of the proposed framework.

## NATIONAL/INTERNATIONAL JOURNAL PUBLICATIONS

1. Kaur, S., Sandhu, A.K. and Bhandari A "Investigation of application layer DDoS attacks in legacy and software-defined networks: A comprehensive review" Int. J. Inf. Secur. (2023) **SCI with impact factor 3.2 by Springer**
2. Rathore, S., Bhandari, A. Review of game theory approaches for DDoS mitigation by SDN. Proc.Indian National Science Academy 88, 634650 (2022). **Scopus indexed by Springer**
3. Verma, Jyoti, Abhinav Bhandari and Gurpreet Singh "iNIDS: SWOT Analysis and TOWS Inferences of State-of-the-Art NIDS solutions for the development of Intelligent Network Intrusion Detection System" published in Computer Communications (2022): 227-2247 **SCI with Impact factor 6.0 by Elsevier**
4. Rathore, Shivani and Abhinav Bhandari "Review of Game Theory approaches for DDoS Mitigation by SDN" published in Proceedings of the Indian National Science Academy (2022): 1-17 **Scopus by Springer**
5. Snehi, Manish, and Abhinav Bhandari, "A Novel Distributed Stack Ensembled Meta-Learning-Based Optimized Classification Framework for Real-time Prolific IoT Traffic Streams" published in Arabian Journal for Science and Engineering (2022): 1-24 **SCI with Impact factor 2.9 by Elsevier**
6. Snehi, Manish, and Abhinav Bhandari, "Vulnerability retrospection of security solutions for software-defined Cyber Physical System against DDoS and IoT-DDoS attacks", published in Computer Science Review Journal in **SCI with impact factor of 12. 9 by Elsevier**
7. Snehi, Jyoti, Abhinav Bhandari, Vidhu Baggan, Manish Snehi and Ritu "Diverse Methods for Signature based Intrusion Detection Schemes Adopted", published in International Journal of Scientific & Technology Research Vol.9 issue 2, July 2020 indexed in **Scopus**.
8. Snehi, Jyoti, Abhinav Bhandari, "Review of Existing Datasets for Network Intrusion Detection System", accepted in Advnace Mathematics Scientific Journal, vol.9 issue 6 pp.3849-3854 July (2020) indexed in **Scopus**
9. Bhandari, Abhinav, Amrit Lal Sangal, Krishan Kumar and Sunny Behal "Anomaly based distributed detection system for DDoS attacks at Tier-2 ISP Networks" published in Journal of Ambient Intelligence and Humanized Computing indexed in **SCI by Springer(2020) with impact factor of 7.104**
10. Bhandari, Abhinav, Amrit Lal Sangal, and Krishan Kumar "Characterizing flash events and distributed denial of service attacks: an empirical investigation", published in Security and Communication Networks (2016) by **John Wiley** indexed in **SCI journal with impact factor 1.791**
11. Singh, Maninder Pal, and Abhinav Bhandari, "New-flow based DDoS attacks in SDN: Taxonomy, rationales, and research challenges" published in Computer Communications indexed in **SCI by Elsevier(2020) with impact factor 6.0**
12. Kaur Chahal, Jasmeen, Abhinav Bhandari, and Sunny Behal, "Distributed Denial of Service Attacks: A Threat or Challenge" published in New Review of Information Networking Journal **Taylor & Francis (2019) 24.1 (2019): 31-103** indexed in **Scopus**.
13. Kaur, sarabjit, Amanpreet kaur, and Abhinav Bhandari, "Current State Of Art And Key Rationales Of Application Layer Distributed Denial Of Service Attacks In Software Defined Networking" published in International Journal of Scientific & Technology Research Vol.9 issue 3, March 2020 indexed in **Scopus**.
14. P Kaur, JK Chahal, A Bhandari, "Load Balancing in Software Defined Networking: A Review", published in Asian Journal of Computer Science and Technology, Vol.7 No.2, pp.1-5, 2018.
15. Gupta, Shaveta, Dinesh Grover, and Abhinav Bhandari, "Vulnerability Analysis of Existing Distributed Denial of Service (DDoS) Defense Frameworks." , published in Asian Journal of Computer Science and Technology 7.3 (2018): 62-67.

16. Kumar Manish and Bhandari, Abhinav, "Performance Evaluation of Web Server's Request Queue against AL-DDoS Attacks in NS-2", published in International Journal of Information Security and Privacy (IJISP) (2017) by IGI Global (2017) indexed in **Emerging Sources Citation Index (ESCI), SCOPUS and Web of Science with impact factor 1.494.**
17. Kaur, Parneet, Kumar Manish and Bhandari, Abhinav,"A review of detection approaches for distributed denial of service attacks", published in International Journal of Systems Science & Control Engineering by **Taylor and Francis** indexed in **Web of Science Emerging Sources Citation Index (ESCI), Scopus, Compendex (Elsevier Engineering Index)**
18. Kaur, Parneet, Kumar, and Bhandari, Abhinav,"DDoS Attack Detection using DFT Based Signal Processing Approach", published in International Journal for Research in Applied Science and Engineering Technology (IJRASET), Volume 5, Issue 8, pp. 1339- 1343, August 2017
19. Sheenam, and Abhinav Bhandari, "Chi Square statistical based technique for Intrusion Detection", published in International Journal of Security and Its Applications, 2016, indexed in **Scopus.**
20. Bhandari, Abhinav, A. L. Sangal, and Krishan Kumar, "Performance Metrics for Defense Framework against Distributed Denial of Service Attacks", published in International Journal of Network Security 6 (2014).
21. Bhandari, Abhinav, A. L. Sangal, and Krishan Kumar, "Destination Entropy based Detection and Traceback Approach against Distributed Denial of Service Attacks", published in International Journal of Computer Network and Information Security,2015,vol.8,pp-9-20.
22. Kumar, Santosh, A.L Sangal and Abhinav Bhandari, "Comparison of Queuing Algorithms against DDoS Attacks", published in International Journal of Computer Science and Information Technologies (IJCSIT), Vol 2 (4), 1574-1580, ISSN:0975-9646, 2011.
23. Singh, Satwinder and Abhinav Bhandari, "Review of PPM, A Traceback Technique for Defending Against Distributed Denial of Service Attacks", published in International Journal of Engineering Trends and Technology (IJETT), Volume 4 Issue 6, ISSN: 2231-5381, June 2013.
24. Singh, karanpreet, Jatinder Singh, Lovpreet Kaur, and Abhinav Bhandari, "Review on RED Algorithm Along with Active Queue Management", published in International Journal of Research in Electronics and Computer Engineering Volume 2. Issue1 Jan-March 2014 ISSN:2348-2281.
25. Singla, Jimmy, Dinesh Grover, and Abhinav Bhandari, "Medical Expert Systems for Diagnosis of Various Diseases", published in International Journal of Computer Applications 93, no. 7 (2014): 36-43.
26. Tamana and Abhinav Bhandari, "Router Based Mechanism for Mitigation of DDoS Attack-A Survey" published in International Journal of Computer Applications Technology and Research 3, no. 7 (2014): 420-426.
27. Gupta, Shaveta, Dinesh Grover, and Abhinav Bhandari. "Detection Techniques against DDoS attacks: A Comprehensive Review", published in International Journal of Computer Applications 96, no. 5 (2014): 49-57.
28. Singh, Jatinder and Abhinav Bhandari, "Review of Wireless Sensor Network Under the Denial Of Service Attack", published in International Journal for Scientific Research and Development (IJSRD ) Vol. 2, Issue 05, 2014, ISSN (online): 2321-0613
29. Neha and Abhinav Bhandari. "RED: A High Link Utilization and Fair Algorithm", published in International Journal of Computer Applications Technology and Research 3.7 (2014): 415-419.
30. Singh, Rajeshwar, Abhinav Bhandari, "Mobile Adhoc Security Issues", published in International Journal of Research in Information Technology,2015, Vol.3, Issue.3, PP-170-177

## **BOOK CHAPTERS ACCEPTED/PUBLISHED**

1. Shikha Garg, Sonia Goyal and Abhinav Bhandari "Role of Blockchain in Security of 6G Networks" published in book "Challenges and Risks Involved in Deploying 6G and NextGen Networks", published by **IGI Global** in 2022 (**Scopus Indexed**)
2. Verma Jyoti, Abhinav Bhandari and Gurpreet Singh "Recent Advancements in the State of Cloud Security in Cyber Physical Systems" published in book" Security and Resilience of Cyber Physical Systems" published by **CRC Press (T&F Group)** in 2022 ISBN- 9781003185543

3. kumar, Mukesh and , Abhinav Bhandari, "DDoS Detection in ONOS SDN Controller Using Snort", published in Book of Conference proceedings of ICT with Intelligent Applications Smart Innovation, Systems and Technologies, vol 311 **Springer**, Singapore in 2022
4. Sharma I., Manohit, Abhinav Bhandari., "Implementing Slowloris DoS Using Docker", published in springer conference:Advances in Information Communication Technology and Computing, Lecture Notes in Networks and Systems, vol 135. **Springer**, Singapore in 2021
5. Snehi, Manish and Abhinav Bhandari, "Security Management in SDN using Fog Computing: A Survey" published in book " Strategies of e-service, e-governance, and Cyber Security" published by **CRC Press (T&F Group)** in 2022.
6. Kaur, sarabjit, Amanpreet kaur, and Abhinav Bhandari, "SDN-Enabled IoT Management Architectures and Security Solutions-A Review" published in book Wireless Sensor Networks and Internet of Things" by **CRC Press (T&F Group)** in 2021.
7. Kaur, Chahal Jasmine, and Abhinav Bhandari, "A Survey of DDoS Defense Mechanisms in Software Defined Networks (SDN)",published in the book Wireless Sensor Networks and Internet of Things by **CRC Press (T&F Group)** in 2021.
8. Singh, Parampreet, Abhinav Bhandari and, Gurpreet Singh, "Blockchain in IOT Use-Case and Challenges", published in book Wireless Sensor Networks and Internet of Things", by **CRC Press (T& F Group)** in 2021.

## NATIONAL/ INTERNATIONAL CONFERENCES

1. J. Verma, A. Bhandari and G. Singh, "Spark-based Distributed Intelligent Network Intrusion Detection System for Unified Dataset," 2023 International Conference on Artificial Intelligence and Applications (ICAIA) Alliance Technology Conference (ATCON-1), Bangalore, India, 2023, pp. 1-6 (**Scopus Indexed**) **sponsored by IEEE**
2. J. Verma, A. Bhandari and G. Singh, "Network Intrusion Detection System Employing Big Data and Intelligent Learning Methods," 2022 4th International Conference on Artificial Intelligence and Speech Technology (AIST), Delhi, India, 2022, pp. 1-6 (**Scopus Indexed**) **sponsored by IEEE**
3. Kumar, M., Bhandari, A. (2023). DDoS Detection in ONOS SDN Controller Using Snort. In: Choudrie, J., Mahalle, P., Perumal, T., Joshi, A. (eds) ICT with Intelligent Applications. Smart Innovation, Systems and Technologies, vol 311. Springer, Singapore (**Scopus Indexed**) **Springer**
4. M. Snehi and A. Bhandari, "IoT-based DDoS on Cyber Physical Systems: Research Challenges, Datasets and Future Prospects", 2022 IEEE International IOT, Electronics and Mechatronics Conference (IEMTRONICS), 2022, pp. 1-8, doi: doi: 10.1109/IEMTRONICS55184.2022.9795708 (**Scopus Indexed**) **sponsored by IEEE** .
5. J. Verma, A. Bhandari and G. Singh, "Feature Selection Algorithm Characterization for NIDS using Machine and Deep learning," 2022 IEEE International IOT, Electronics and Mechatronics Conference (IEMTRONICS), 2022, pp. 1-7, doi: 10.1109/IEMTRONICS55184.2022.9795709 (**Scopus Indexed**) **sponsored by IEEE** .
6. M. Snehi and A. Bhandari, "An SDN/NFV based Intelligent Fog Architecture for DDoS Defense in Cyber Physical Systems," , 10th International Conference on System Modeling and Advancement in Research Trends (SMART), 2021, pp. 229-234, doi: 10.1109/SMART52563.2021.9676241 (**Scopus Indexed**) **technically cosponsored by IEEE** .
7. J. Snehi, A. Bhandari, V. Baggan, M. Snehi and H. Kaur, "AIDAAS: Incident Handling and Remediation Anomaly-based IDaaS for Cloud Service Providers",10th International Conference on System Modeling and Advancement in Research Trends (SMART), 2021, pp. 356-360, doi: 10.1109/SMART52563.2021.9676296 (**Scopus Indexed**) **technically cosponsored by IEEE**.
8. J. Snehi, M. Snehi, A. Bhandari, V. Baggan and R. Ahuja, "Introspecting Intrusion Detection Systems in Dealing with Security Concerns in Cloud Environment" , 10th International Conference on System Modeling and Advancement in Research Trends (SMART), 2021, pp. 345-349, doi: 10.1109/SMART52563.2021.9676258 (**Scopus Indexed**) **technically cosponsored by IEEE**.

9. M. Snehi and A. Bhandari, "Empirical Investigation of IoT Traffic in Smart Environments: Characteristics, Research Gaps and Recommendations" 10th International Conference on System Modeling and Advancement in Research Trends (SMART), 2021, pp. 176-181, doi: 10.1109/SMART52563.2021.9676298 (**Scopus Indexed**)**technically cosponsored by IEEE.**
10. J. Verma, A. Bhandari and G. Singh, "A Meta-analysis of Role of Network Intrusion Detection Systems in Confronting Network Attacks", 8th International Conference on Computing for Sustainable Global Development (INDIACom), 2021, pp. 506-511, doi: 10.1109/INDIACom51348.2021.00090 (**Scopus Indexed**) sponsored by **IEEE.**
11. M. Snehi and A. Bhandari, "Apprehending Mirai Botnet Philosophy and Smart Learning Models for IoT-DDoS Detection," 8th International Conference on Computing for Sustainable Global Development (INDIACom), 2021, pp. 501-505, doi: 10.1109/INDIACom51348.2021.00089 (**Scopus Indexed**) sponsored by **IEEE.**
12. Snehi J., Bhandari A., Snehi M., Tandon U., Baggan V. , "Global Intrusion Detection Environments and Platform for Anomaly-Based Intrusion Detection Systems", in Proceedings of Second International Conference on Computing, Communications, and Cyber-Security. Lecture Notes in Networks and Systems, vol 203. **Springer**, Singapore. [https://doi.org/10.1007/978-981-16-0733-2\\_58](https://doi.org/10.1007/978-981-16-0733-2_58).
13. Mahajan, Anmol, and Abhinav Bhandari, "Attacks in Software-Defined Networking: A Review." Available at SSRN 3564048 (2020).
14. Kaur, Aman, and Abhinav Bhandari, "Detection and mitigation of spoofing attacks by using SDN in LAN", in the Proceedings of Advances in Intelligent Systems and Computing, 2017 (**Scopus Indexed**).
15. Gill Ashminder and Abhinav Bhandari, "A Conceptual Review of Automatic Question Generation from a given Punjabi Text", in the proceedings of 4th International Conference on New Frontiers of Engineering, Science, Management and Humanities (ICNFESMH-2017) Organized at Osmania University Campus, Hyderabad.
16. Jashanpreet Singh Toor, and Abhinav Bhandari, "Honeypot: A Deceptive Trap", in the proceedings of 2nd International Conference on Research Trends in Engineering, Applied Science and Management(ICRTESM-2017) Organized at NITTTR, Chandigarh
17. Singh, B., Krishan Kumar and Abhinav Bhandari, "Simulation study of application layer DDoS attack", in proceedings of the 2015 International Conference on Green Computing and Internet of Things, ICGCIOt 2015I (**Scopus Indexed**).
18. Shaveta, Abhinav Bhandari, and Krishan Kumar Saluja, "Applying Genetic Algorithm in Intrusion Detection System: A Comprehensive Review", in the proceedings of international Conference on Recent Trends in information, Telecommunication and Computing ITC by ACEEE in March, 2014.
19. Bhandari, Abhinav, A.L Sangal, Krishan Kumar, "Issues and Challenges of IP Traceback of Distributed Denial of Service Attacks", in the proceedings of National congress on Science and Technology, organized at DAVIET, Jalandhar in May 2013.
20. Singh, Karanpreet, Krishan Kumar, and Abhinav Bhandari. "Classification and State of Art of IP Traceback for DDoS Defense, in the proceedings of international conference of Advances in Recent Technologies in Communication and Computing-ARTCOM September 20-21, 2013.
21. Singh,Satwinder, Krishan Kumar, and Abhinav Bhandari, "Study to validate the performance of flooding Based Distributed Denial of Service Attacks", in the proceedings of 2nd National Conference on Recent Trends in the Computer Science and Applications and Computational Mathematics organized by Indira College of Commerce and Science in December 2013.
22. Bhandari, Abhinav, A.L Sangal and Krishan Kumar, "Queuing Algorithms Performance against Buffer size and Attack Intensities in DDoS Attacks, in the proceedings of International Conference on Advance Computing , Networking and Security organized by Department of Computer Science and Engineering, NIT Surathkal, Mangalore in December 2011 indexed in LNCS Vol. 7135 springer (**Scopus Indexed**).
23. Kumar, Krishan, A.L Sangal, and Abhinav Bhandari, "Traceback Techniques Against DDoS Attacks: A Comprehensive Review, in the proceedings of 2nd International Conference Computer and Communications Technologies organized by MNLr, NIT Allahabad in September 2011 (**Scopus Indexed**).

24. Bhandari, Abhinav and Harpreet Kaur, "Security and Privacy issues of RFID", in the proceedings of National Conference on challenges and oppurtunities in IT organized by RIMT, Mandi Gobindgarh in 2007.
25. Bhandari, Abhinav and Vinay Chopra, "Solving FPGA Routing Problem using Genetic Algorithm", in the proceedings of 9th National Conference oraganized by ISITA at GSBA, Greater Noida in December 2007.
26. Bhandari Abhinav, "Genetic Algorithm-Evolutionary Approach for Solving Mathematical Expression", in the proceedings of National Conference on Application of Mathematics in Engineering and Technology organized by MIMIT, Malout in 2005.

## RESEARCH RELATED ACTIVITIES

1. **Editor** of Book on "Security and Resilience of Cyber Physical System", published by CRC-Press (Taylor and Francis Group) in the year 2022.
2. **Editor** of the Book on "Applications of AI and Machine Learning, published by SEA-Press in the year 2021.
3. **Guest Editor** for special issue of Advance Mathematics Scientific Journal (**AMSJ scopus indexed journal**) in International Conference on Applications of AI and Machine Learning (ICAML-2020) organized by Department of CSE, Punjabi University, Patiala.
4. Reviewer for Elsevier Journal **Computer Science Review** indexed in SCI(E) the year 2019 and 2020
5. Reviewer for Elsevier Journal of **King Saud University Computer and Information Sciences** in the year 2019.
6. Reviewer of Elsevier journal **Computer and Security** indexed in SCI(E) in the year 2016.
7. Reviewer of International Conference Recent trends in computing organized by department of Computer Engineering, Punjabi University, Patiala, Punjab(India).

## Research Indices

S.No.	Name of Agency	Metrics	Citations
1.	Google Scholar	H-index- 13 I-Index-15	707
2.	Scopus (ORCID ID:0000-0002-2398-9144)	H-Index 9	368

## Patent granted

1. Patent (Application Number: 2022/00322) entitled "AN AUTONOMOUS INTELLIGENT SELF-LEARNING DEFENSE SYSTEM FOR DETECTING AND MITIGATING CYBER ATTACKS IN SMART SYSTEMS" granted from Republic of South Africa under the Patent ACT 1978 in January 2022.

## Books Edited/Published

S.No.	Name of Book	Year of Publication	Name of Publisher	ISSN No.
1.	Security and Resilience of Cyber Physical Systems	2022	CRC-Press (Taylor&francis group)	978-10-03185-54-3
2.	Simplified Approach to Data Structure using C	2017	Eagle Publications	978-93-83412-50-1
2.	Operating System	2010	Anand Publicaitons	N-A
3.	Data Communication and Computer Networks	2010	Anand Publications	N-A

# RESEARCH AND DEVELOPMENT ACTIVITIES

## Ph.D. Guidance

S.No.	Name of Student	Year of Registration	Title	Status
1.	Jasmine Kaur Chahal	2018	Development OF Distributed Denial Of Service Attack Detection Technique In Software-Defined Network Enabled Cloud	Registered
2.	Manish Snehi	2019	Fog-Assisted Mitigation Framework Against Iot-based DDoS Attacks in Software-Defined Cyber Physical System	Completed
3.	Jyoti Snehi	2020	Design and Development of Cloud-Based Real Time Intelligent Network Intrusion Detection Framework	Thesis Submitted
4.	Jashandeep Singh Toor	2022	Design and Development of a Security Framework in Metaverse	Registered
5	Shikha	2022	Development of Collaborative Mitigation Framework against DDoS Attacks in SDN-Enabled Autonomous System Using Blockchain	Registered
6	Palak	2023	Development of Liveness Detection Technique against Fingerprint Presentation Attacks	Registered
7.	Kiran Gupta	Not yet		Enrolled

## M.Tech Thesis Guided

S.No.	Name of Student	Year of Completion	Title of Thesis
1.	Mukesh	2022	DDoS Detection in SDN Environment using Snort IDS
2.	Arshpreet Kaur	2021	Detection of Fake Social Media Profile using Machine Learning
3.	Maninder Pal Singh	2020	Towards Generation of DDoS Dataset in an SDN-Enabled Micro Data Center.
4.	Anukampa	2019	An Improved Performance of Stateful Firewall in Software Defined Networking.
5.	Prabhjot kaur	2018	Comparison of Load balancing Strategy in Software Defined Networking.
6.	Paramveer Singh Brar	2018	Development of Distributed Controller Clustering Mechanism in Software Defined Networking
7.	Vinay	2018	Comparative analysis of Machine Learning Classifiers for Detecting Different types of Distributed Denial of Service Attacks
8.	Jashanpreet Singh Toor	2017	Deployment of Low Interaction Honeypots to detect and characterize attacks in private network
9.	Mr. Ashminder Gill	2017	A Hybrid System for Automatic Question Generation From Punjabi Text.
10.	Mandeep Kaur	2016	Comparative study of TCP Congestion Control Variants
11.	Shiana	2016	Enhance The Botnet Detection with Correlation of Features & Neural Network using Genetic Algorithm
12.	Amandeep Kaur	2016	Detection and Mitigation of IP Spoofing in LAN using Software Defined Network
13.	Nandini Aggarwal	2015	A Novel Approach for Data Level Security with Robust Authentication for LTE Networks.
14.	Manish Kumar	2015	Performance Measurement and Tolerance model for Web server Against Application Layer Distributed Denial of Service Attacks.
12.	Rajeshwar Rana	2014	Classification and Analysis of various Performance Metrics for Defense Framework of Distributed Denial of Service Attacks.
15.	Lovepreet Kaur	2014	Performance Evaluation of QoS Based Routing Protocols under Sinkhole Attack in Wireless Sensor Network.
16.	Karanpreet Singh Vrik	2014	Performance Analysis of Active Queue Management Techniques under Distributed Denial of Service Attacks.
17.	Neha Arya	2014	An Active Queue Management solution to Improve Network Performance under Denial of Service Attacks.
18.	Parampreet Singh	2014	Information theory based traceback approach against DDoS attacks.
19.	Shaveta	2014	An Entropy based Detection of Distributed Denial of Service Attacks.
20.	Mr. Jatinder Singh	2014	Performance Evaluation of Various Quality of Service (QoS) Parameters of a Wireless Sensor Network under Black hole, SYN Flooding and Wormhole Attacks.
21.	Mr. Arshpreet Singh	2013	Study The Impact Of DDoS Attacks On Different Services Using Various AQM Techniques.
22.	Mr. Satwinder Singh	2013	Simulation Study and Vulnerability Analysis of Traceback Techniques Against Flooding Based Distributed Denial of Service Attacks.
23.	Mr. Karanpreet Singh	2013	IP Traceback using Port Marking against flooding Based Distributed Denial of Service



## **E-CONTENT PROGRAMMES**

- Produced University Grant Commission Educational TV and Ministry of Human Resource Department (MHRD,India) NME-ICT eContent programmes in the capacity of resource person/subject expert in the subject of Cyber Security/Information Security at Educational Multimedia Research Centre, Punjabi University, Patiala. These programmes are being telecast on the UGC 24-HOUR Higher Educational Video Channel- **DD Vyas**.

## **PARTICIPATION IN ACADEMIC AND ADMINISTRATIVE COMMITTEES AND RESPONSIBILITIES**

- President of media cell of Department of Computer Science & Engineering, Punjabi University since 2020.
- Co:coordinator of International Student Affairs for the session of 2021-2022.
- Organizing Secretary for International Conference on Applications of AI and Machine Learning (ICAML-2021) held at Department at Computer Science & Engineering, Punjabi University, Patiala on 2,3 December 2021.
- Worked as an active member for admission cell of Department of CSE, Punjabi University Patiala for admissions in 2020-21 and 2021-2022 session.
- Organizing Secretary for International Conference on Applications of AI and Machine Learning (ICAML-2020) held at Department at Computer Science & Engineering, Punjabi University, Patiala on 21-22 May 2020.
- Local Coordinator for one week faculty development programme on Cyber Security organized by NITTTR, Chandigarh from 9th December 2019 to 13th December 2019 at Department of CSE, Punjabi University, Patiala
- Member, NBA Accreditation process Committee, Department of Computer Science & Engineering, Punjabi University, Patiala
- Overall Coordinator of Machine Learning and IOT Lab from July 2018 to till date.
- Overall Coordinator for All India Council of Technical Education (AICTE) approval related Activity for the Department since 2018 to till date.
- Overall Coordinator of Cyber Security and Programming Cell in the Department of Computer Science & Engineering, Punjabi University, Patiala since 2017 to till date.
- Member of Research Article Review Committee for International Conference held at department of Computer Science & Engineering, Punjabi University, Patiala in year 2016.
- Worked as a Coordinator of Proceeding publishing Committee in year 2016 in International Conference RTIC 2016 organized by Department of Computer Engineering, Punjabi University, Patiala, Punjab(India).
- In-charge of maintenance of Department's Website ([www.csepup.ac.in](http://www.csepup.ac.in)) for the year 2015 to 2016.
- Worked as a Secretary of Board of Studies in the Department of Computer Science & Engineering, Punjabi University, Patiala from 2015 to 2016.
- Member of Board of Studies for graduation and post graduation for the session 2015 to 2016.
- Worked as a Dean Academics for one year from July 2009 to 25th July 2010 in Lala Lajpat Rai Group of Institutes of Moga affiliated to Punjab Technical University, Kapurthala, Punjab (India).
- Worked as a Head of Department of Computer Science & Engineering Since July 2006 to 25th July 2009.

## PARTICIPATION IN SEMINARS/WORKSHOPS/FACULTY DEVELOPMENT PROGRAM/SHORT TERM TRAINING COURSES

1. Participated in five day short term course on "Exploring the Future: Cutting-edge Trends in Industry" held online from 28-06-2023 to 2-07-2023 organized by Department of CSE, Dr. B.R Ambedkar NIT Jalandhar
2. Participated in five day short term course on "Security in Artificial Intelligence: Strategies and Best Practices" held online from 14-06-2023 to 18-06-2023 organized by Department of CSE, Dr. B.R Ambedkar NIT Jalandhar
3. Participated in University Grant Commission (UGC) Sponsored Online Refresher course on "ICT" Organized by Academic Staff College, Punjabi University, Patiala from 13-09-2021 to 25-09-2021.
4. Participated in All India Council of Technical Education (AICTE) sponsored two week short term course on "Cyber Security" conducted by National Institute of Technical Teachers Training and Research (NITTTR), Chandigarh (India) from 27th May 2019 to 31st May 2019.
5. Participated in Faculty Development Programme on "Effective Technical Writing Using LaTeX" conducted by Department of CSE at Baba Banda Singh Bahadur Engineering College, Fatehgarh Sahib, Punjab(India) from 3rd July 2017 to 7th July 2017.
6. Participated in TEQUIP-II Sponsored one week short term course on "Advances in Computer Science and Information Technology Trends" conducted by Department of CSE at Dr. B.R Ambedkar NIT Jalandhar, Punjab(India) from 2nd January 2017 to 6th January 2017.
7. Participated in University Grant Commission (UGC) Sponsored Refresher Course on "Professional Courses(Computer Engineering)" Organized by Academic Staff College, Punjabi University, Patiala from 23-05-2016 to 11-06-2016
8. Participated in Two days Workshop on "Latest Trends in Cloud Computing" organized by Department of Computer Engineering, Punjabi University, Patiala, Punjab(India) from 11th April 2016 to 12th April 2016.
9. Participated in National Institute of Technical Technical Teachers Training and Research (NITTTR) sponsored two Week short term course on "Cyber Threat Detection and Safety" conducted by Department of CSE, Punjabi University, Patiala, Punjab(India) from 4th January 2016 to 15th January 2016.
10. Participated in National Institute of Technical Technical Teachers Training and Research (NITTTR) sponsored two Week short term course on "Vulnerability in Cyber space and Adopting Security Policies" conducted at MIMT, Malout, Punjab (India) from 20th July 2015 to 31st July 2015.
11. Participated in All India Council of Technical Education (AICTE) Sponsored and TEQIP-II supported Faculty Development Programme on "Research Techniques" Organized by Department of Mechanical Engineering, Shaheed Bhagat Singh State Technical Campus, Ferozepur,Punjab (India) from 25th May to 5th June 2015.
12. Participated in University Grant Commission (UGC) Sponsored Orientation Programme on "17th Orientation Programme" Organized by Academic Staff College, Punjabi University, Patiala from 10-07-2013 to 06-08-2013.
13. Participated one day workshop cum Contest on Business Intelligence held at Chitkara University, Punjab Campus on 28th Feb 2013 organized by Infosys Limited Chandigarh.
14. Participated in five days workshop/Meet of Advance Asia Pacific Meet organized by APAN, from 22-26th August 2011 at Indian Habitat Centre New Delhi.
15. Participated in three days workshop on "Learning Effective Document Writing using LaTeX" organized by Department of Information Technology, DAVIET Jalandhar, Punjab (India) from 8-10th April, 2010.
16. Participated two days workshop cum short term course on "Design of Intelligence Systems using Artificial Intelligence (MATLAB)" organized by PTU Regional Centre,LLRIET,Moga, Punjab (India) from 30th July to 31st July 2005.

## TECHNICAL EVENTS ORGANIZED

Office held	Activity	Date and Venue
Coordinator	One Day Workshop on <b>Machine Learning and Artificial Intelligence</b>	31st Octobar 2018 at Department of Computer Engineering , Punjabi University Patiala
Coordinator	One Day Workshop on <b>Google Machine Learning Crash Course</b>	23rd August 2018 at Department of Computer Engineering , Punjabi University Patiala
<b>Over All Coordinator of Conference Proceeding Committee</b>	International Conference on <b>Recent Trends in Computing</b>	30th August to 31st August 2016 Department of Computer Engineering , Punjabi University Patiala
<b>Technical Session Chair</b>	<b>Science and Research Board (SERB)</b> sponsored 2nd National Conference on Role of IT in Management and Engineering: Issues and Prospects	26th August to 27th August 2016 Organized by Department of Computer Science & Engineering , MIMT, Malout, Punjab(India).
<b>Over All Coordinator</b>	NITTTR sponsored Two Weeks Faculty Development Programme	4th Jan 2016 to 15th Jan 2016 Department of Computer Engineering , Punjabi University Patiala.
<b>Technical Session Chair</b>	National Congress on Science and Technology for Futuristic Computing and Applications	30th and 31st May 2013 at DAVIET, Jalandhar.
<b>Over All Coordinator</b>	ASTRON 2k-10 <b>National Level Techno Cultural Symposium</b>	19th -20th Feb 2010 LLRIET, Moga

## Invited Lectures

S.No.	Title of the Lecture	Date of Event	Organized by
1.	Security Issues in Software Defined Networks	10-02-2022	Punjab Institute of Technology Rajpura under the AICTE Sponsored Faculty Development Programme.
2.	Cyber Security	18-12-2020	Punjabi University Patiala under Technical Education Lecture Series of Department of CSE Punjabi University, Patiala
3.	Issues and Challenges in OSI Model	23-02-2016	Shree Ganesh Group of Institutes
4.	Theory of Computation	25-10-2012	Shree Ganesh Group of Institutes
5.	DDoS: A Threat of a Challenge	13-03-2018	Aryan college, Rajpura
6.	DDoS: A Threat of a Challenge	14-10-2017	Punjabi University
7.	Introduction to DDoS	21-12-2016	Punjabi University, Patiala
8.	Defence to DDoS attacks	21-12-2016	Punjabi University, Patiala

## Technical Skills and Research Tools Explored

**Programming languages:**(C,Turbo C++,Java), **Web**(HTML, DHTML), **Simulators:**(Network Simulator NS-2),(Mininet), **Analysis Tools**(Gnuplot, xgraph, Tracegraph),**Operating System Environment:**(Windows 9X,7, Ubuntu and other Linux Distributions, **Report Writing Tools:** LaTeX, Ms-Word, JabRef

## SUBJECTS / TEACHING SUBJECTS HANDLED TILL DATE AT UG AND PG LEVELS OF ENGINEERING

1. Information Security and Cyber Law (UG).
2. Computer Networks (UG and PG)
3. Network Security (UG)

4. Cyber Security (UG)
5. Research Methodology (PG and Ph.D.)
6. Operating Systems (UG)
7. Object oriented Programming (UG)
8. Theory of Computation (UG)

## MEMBER OF PROFESSIONAL BODIES/SOCIETIES

1. Life time member of Institute of Engineers (IEI).
2. Member of Indian Society for Technical Education (I.S.T.E.), India
3. Member of Indian Society of Information Theory and Applications (Member Ship No. 119).
4. Member of Internet Society Chapter.
5. Member of Institute of Doctors Engineers Scientist (IDES) (Membership no.1933).
6. Member of International Association of Engineers ( Member ship no. 139656)

## EXTRA CURRICULAR ACTIVITIES

Seminar Presentations, Group Discussions, Organizing Workshops and Conferences

## LANGUAGE PROFICIENCY

Language	Read	Write	Speak
Hindi	Yes	Yes	Yes
English	Yes	Yes	Yes
Punjabi	Yes	Yes	Yes

## REFERENCES

1. Dr. A.L. Sangal, Professor & Head, Department of CSE, Dr. B.R Ambedkar, National Institute of Technology, Jalandhar, Punjab(India), **Email: sangal62@yahoo.com, Mobile: +91-9876658767**
2. Dr. Krishan Kumar, Professor, Department of IT, University Institute of Engineering & Tehnology, Panjab University Chandigarh(India), **Email: k.salujaiet@gmail.com, Mobile: +91-8288012014**
3. Dr. Raman Maini. Professor & Head, Department of CSE, Punjabi University, Patiala, Punjab(India), **Email: research.raman@gmail.com, Mobile: +91-9779020951**

## DECLARATION

*All the above-mentioned information is correct to the best of my knowledge and belief.*

**Dr. Abhinav Bhandari**