Dr Om Pal

Associate Professor

Department of Computer Science, University of Delhi (Central University), North Campus, Delhi-110007

(**1.** Ex-Scientist, MeitY, Govt of India   **2.** Ex-Sr Technical Officer, C-DAC   **3.** Ex-IT Engineer, NTPC)

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Mobile: +91-8929874957

ResearchGate Profile

https://www.researchgate.net/profile/Om_Pal5

Google Scholar Profile

https://scholar.google.com/citations?user=ri4xFn8AAAAJ&hl=en

ORCID: 0000-0002-2978-1264

Research Interests:

Cryptography, Information Security, Cyber Security, Post-Quantum Cryptography, Quantum Computing, Blockchain Technology, High Performance Computing, Algorithms Analysis and Design, Cyber Law, Artificial Intelligence for Cyber Security, Machine Learning for Cyber Security, Operation Research and Mathematics.

Academic Background:

PhD (Information Security) in 2019 from Jamia Millia Islamia New Delhi

MS by Research (Cryptography) in 2015 from IIT Bombay

MBA (Operations Management) in 2009 from IGNOU

B.E. Computer Science & Engineering in 2002 from Dr. B.R.A. University, Agra

PG Diploma program in Cyber Law, Cyber Crime Investigation and Digital Forensics in 2025 from National Law Institute University, Bhopal.

Offline Certificate Courses:

1. IPR (Fundamentals of IPR-Patent, Copy Right, Trade Mark etc.): Six weekends certificate course from IIT Bombay.

2. IPR (Patent searching and Drafting): Two weekends certificate course from IIT Bombay.

3. IPR and WTO Issues: Five days training programme from Patent Facilitating Centre (PFC), TIFAC, Department of Science and Technology, Government of India.

Online Certificate Courses:

1. Five weeks (online certificate course through Coursera) on Quantum Computing offered by Saint Petersburg State University.

2. Three months certificate course on Automata Offered by Prof. Jeffery Ullman (Stanford University).

3. Three months certificate course on Cryptography Offered by Prof. Dan Boneh (Stanford University).

GATE/NET/JEST Certificates:

1. Qualified UGC NET in Computer Science and Applications

2. Qualified JEST with AIR 32 in Theoretical Computer Science

3. Qualified GATE 2006 in subject of Computer Sc.

AICTE & C-DAC certified 'Master Trainer' for High Performance Computing

Undersigned is an AICTE & C-DAC certified 'Master Trainer' for proving training to faculties/teachers of all over India in field of High-Performance Computing.

Certified Ethical Hacker:

Undersigned is a certified ethical hacker (EC-Council certificate No. ECC4385972601, Valid upto March 2022)

Patents Granted:

1. **Indian Patent No:** 515115

   Date of grant: 26.02.2024

   Patent Title: Centralized Digital System for Ppv and Ppc Multimedia Services for Conditional Access System

   Inventors: Om Pal, Bashir Alam

2. Indian Patent No: 514965

Date of grant: 26.02.2024

Patent Title: Method and System For Secure Group   Communication   For Dynamic Group

Inventors: Om Pal, Bashir Alam

Member in External Committees:

(i) Member in Development Coordination Committee (DCC) and Sub-DCC (FY-2024-25) for the preparation of standards in products and services of QT dealt by the Quantum Technology (QT) Division, TEC New Delhi.

(ii) Member in committee in Bureau of Indian Standards, Ministry of Consumer Affairs, Food and Public Distribution, Government of India for Review of ISO Standard 16340 (Application of blockchain-based traceability platform for cold chain food) for Adoption as Indian Standards.

(iii)   Member in committee in Bureau of Indian Standards, Ministry of Consumer Affairs, Food and Public Distribution, Government of India for Review of ISO Standard ISO 20415 (Trusted mobile e-document framework—Requirements, functionality and criteria for ensuring reliable and safe mobile e-business).

Books Published / Edited:

1. Mangesh Ghonge, Pradeep N, Amar Das, Yulei Wu and **Om Pal, Book:** **"***Unleashing the Potentials of Blockchain Technology for Healthcare Industries"***, 1st Edition - March 27, 2023, published by Elsevier and indexed in Scopus database. ISBN: 9780323994811.

2. **Om Pal**, Vinod Kumar, Rijwan Khan, Bashir Alam, Mansaf Alam, "**Book: Cyber Security Using Modern Technologies***"*, published by CRC Press (Taylor & Francis Group), 1st Edition - August, 2023 indexed in Scopus database. ISBN: 9781032213194.

3. Arun Prakash Agrawal, Gaurav Raj, Ankur Choudhary, **Om Pal**, Hari Mohan Pandey and Bhuvan Unhelker, 4th International Conference on Advances and Applications of Artificial Intelligence and Machine Learning (ICAAAIML 2023),

28th-29th December 2023, Sharda University, Gr Noida. Conference proceeding book published by Springer.

FDP Coordinator:

FDP Coordinator for one week Faculty Development Program on **"Quantum Computing and Post- Quantum Cryptography"** organized at Department of Computer Science, University of Delhi from 03rd February – 09th February, 2025.

Nodal Officer for PhD Scheme of MeitY:

Undersigned is a Nodal Officer from University of Delhi side for Visvesvaraya PhD Scheme of MeitY.

Guest Editor for Journals:

1. **Lead Guest Editor** for special issue on "Multimedia Security Based on Quantum Cryptography and Blockchain" in Multimedia Tools and Applications (SCIE Springer Journal, IF- 2.3), September 2022.

2. **Guest Editor** for special issue on "Artificial Intelligence in Food Quality Improvement" in Journal of Food Quality (SCIE WILEY Journal, Hindawi, IF-1.9), October 2022.

PhD Supervision:

(a) Supervised:

1. Mr. Om Pradyumn Gupta (Scientist-E, NIC) pursuing PhD in the area of Artificial Intelligence at Sharda University, Greater Noida (awarded).

2. Mr. Ritesh Kumar Dwivedi (Scientist-D, NIC) pursuing PhD in the area of Artificial Intelligence at Sharda University, Greater Noida (awarded).

(b) Under Supervision:

1. Ms. Seema Sirpal, pursuing PhD on "Security Framework on e-Governance: Vulnerability Assessment and Risk Management" at University of Delhi.

2. Mr. Pardeep Singh, pursuing PhD on "Advancing Secure Authentication and Digital Signatures Through Quantum and Post-Quantum cryptography" at University of Delhi.

3. Ms. Laxmi Chandolia, pursuing PhD on "Investigating authentication in a multi-server environment and it's security standards" at University of Delhi.

4. Mr Dheeraj Bhatt, pursuing PhD on "Development of a Post-Quantum Encryption scheme for 5G Communication Systems" at University of Delhi.

5. Ms Nikita, pursuing PhD on "Research in Digital Forensics" at University of Delhi.

Member in PhD advisory committees:

Presently member of the PhD advisory committee for the following PhD candidates-

1. Walde Rajesh Baliram, Department of Computer Engineering, Jamia Millia Islamia, New Delhi.

2. Muhammad Hamid, Department of Computer Engineering, Jamia Millia Islamia, New Delhi.

3. Kum Kum Kumari, Department of Computer Science, University of Delhi.

4. Kuldeep Tiwari, Department of Computer Science, University of Delhi.

5. Rajesh Yadav, Department of Computer Science, University of Delhi.

6. Surendra Kumar, Department of Computer Science, University of Delhi.

Member/Expert in recruitment Boards:

Given services as interview panel member to Government and Government agencies for recruitment of officers and other technical staffs. Given services as Moderator & paper setters for national level Government exams.

Research Papers published in International Journals:

1. Vinod Kumar, Om Pal, SLMAS: A Secure and Lightweight Mutual Authentication Scheme for Telecare Medical Information System Based on ECC, *"The Journal of Supercomputing",* 2025 **(accepted) (SCIE indexed).**

2. Ritesh Kumar Dwivedi, Parma Nand, **Om Pal**, "Attention based English to Indo-Aryan and Dravidian language translation using Sparsely Factored Neural Machine Translation", *Indonesian Journal of Electrical Engineering and Computer Science,* Vol. 37, No. 1, January 2025, pp. 250~256, **(Scopus indexed)**. DOI: 10.11591/ijeecs.v37.i1.pp250-256.

3. OP Gupta, AP Agarwal and **Om Pal** "Innovative approach of Masked Facial Recognition", *Electronic Government, an International Journal, March, 2024,* **(Scopus indexed)**. DOI: 10.1504/EG.2025.10063683.

4. OP Gupta, AP Agarwal and Om Pal "Masked Facial Recognition using Ensemble Convolutional Neural Network (CNN) and Grey-Level Co-occurrence Matrix (GLCM)", *Indonesian Journal of Electrical Engineering and Computer Science*, Vol. 34, No.1, April 2024, pp. 302-311. **(Scopus indexed)**. DOI: 10.11591/ijeecs.v34.i1.pp302-311.

5. OP Gupta, AP Agarwal and **Om Pal** "Effective approach of face mask position detection and recognition", *Information System and Smart City,* 3(1), 467, 2024. https://doi.org/10.59400/issc.v3i1.467.

6. Vinod Kumar, **Om Pal**, Vinay Thakur, Kamendra Kumar "SCGKM: A secure and cost effective group key management scheme for multicast communication in large dynamic groups", *International Journal of Information Technology,* Feb 2022 (Springer, **Scopus indexed**). DOI: 10.1007/s41870-021-00827-3.

7. Shafi Ahmad, Sarfaraz Masood, Noor Zaman Khan , Irfan Anjum Badruddin, **Om pal**, Ali Ahmadian, Zahid A. Khan, Amil Hayat Khan "*Analysing the impact of COVID-19 pandemic on the psychological health of people using fuzzy MCDM methods",* Operations Research Perspectives, Volume 10, 2023 (**SCIE Journal, IF-3.38**). Doi.org/10.1016/j.orp.2022.100263.

8. Vinodhini Mani, Mangesh M. Ghonge, Noshina Krisna Chaitanya, **Om Pal**, Moolchand Sharma, Senthilkumar Mohan, Ali Ahmadian, "*A New Blockchain and Fog Computing Model for Blood Pressure Medical Sensor Data Storage*", Computers and Electrical Engineering, September, 2022 (**SCIE Journal, IF-4.1**). DOI: 10.1016/j.compeleceng.2022.108202

9. Rajat Kumar Rathore, Deepti Mishra, **Om Pal**, Pawan Singh Mehra, Ahmad Sobri Hashim, Azrulhizam Shapii, Ciano T, Meshal Shutaywi, "*Real-World Model for Bitcoin Prediction*", Information Processing and Management, 2022 (**SCIE Journal, IF-6.2**). DOI: 10.1016/J.IPM.2022.102968

10. Mohd Sadiq, Sarfaraz Masood, **Om Pal**, "*FD YOLOv5 Fuzzy image enhancement based robust deep neural model for safety helmet detection*", International Journal of Fuzzy Systems, April 2022 (**SCIE Journal, IF-4.40**). DOI: 10.1007/S40815-022-01267-2

11. Sarfaraz Masood, Khwaja Wisal Maqsood, **Om Pal**, Chanchal Kumar, "An Ensemble Feature Selection Framework for Early Detection of Parkinson's Disease Based on Feature Correlation Analysis", Mathematical Methods in the Applied Sciences, 2021 (**SCIE Journal, IF-2.32**). DOI: 10.1002/MMA.7835

12. Anshu Kumar Dwivedi, Pawan Singh Mehra, **Om Pal**, M.N.Doja, Bashir Alam, EETSP: "Energy Efficient Two Stage Routing Protocol for Wireless Sensor Network Assisted Internet of Things", *International Journal of Communication Systems,* 2021 (**SCIE Journal, IF-2.04**). DOI: 10.1002/DAC.4965

13. Shahzad Alam, Tanvir Ahmad, MN Doja, **Om Pal**, "Dual secure robust watermarking scheme based on hybrid optimization algorithm for image security", *Personal and Ubiquitous Computing*, 2021(Springer **SCIE Journal, IF-3.0**). DOI: 10.1007/S00779-021-01597-2

14. **Om Pal**, Bashir Alam, "Efficient and Secure Key Management for Conditional Access Systems", *IEEE Transactions on Consumer Electronics*, Vol. 66, No. 1, February 2020 (**SCIE Journal, IF-2.94**). DOI: 10.1109/TCE.2019.2959629.

15. **Om Pal**, Bashir Alam, **"**Efficient and secure conditional access system for pay-TV systems" *Multimedia Tools and Applications*, vol. 78, no. 13, pp. 18835-18853, July 2019 **(**Springer, **SCIE Journal, IF- 2.75**). DOI: 10.1007/S11042-019-7257-5

16. **Om Pal**, Bashir Alam, "Key Management for Blockchain Technology" *ICT Express journal*, Vol. 7, Issue 1, pp. 76-80, March 2021(Elsevier, **SCIE Journal, IF-4.31**). DOI: 10.1016/J.ICTE.2019.08.002

17. Vaishali Singh, S. K. Pandey, **Om Pal**, "Cloud Security Assurance: 'Elevation of Privilege' Perspective ", *International Journal of Advanced Science and Technology* Vol. 29, No. 1, January, 2020, pp. 1523 – 1531 (Scopus indexed).

18. **Om Pal,** Surendra Singh, "Blockchain Technology and It's Applications in E-Governance Services", *International Journal of Recent Technology and Engineering (IJRTE)***,** Volume-8 Issue-4, November 2019 (Scopus indexed). DOI:10.35940/ijrte.D8599.118419

19. **Om Pal**, Bashir Alam, "Cyber Security Risks and Challenges in Supply Chain *"International Journal of Advanced Research in Computer Science,* Volume.8 Issue 4,May 2017 (UGC list and ICI indexed).

20. **Om Pal,** Bashir Alam, "Diffie-Hellman Key Exchange Protocol with Entities Authentication", *International Journal of Engineering and Computer Science,* Volume 6 Issue 4 April 2017, Page No. 20831-20839. DOI: 10.18535/ijecs/v6i4.06

21. Mohit Kaushik, **Om Pal** and Neha Mittal, "Study of Undeniable Digital Signatures Schemes "*International Journal of Advanced Research in Computer Engineering & Technology (IJARCET)* Volume 3 Issue 5, May 2014 (Scopus indexed).

22. Utkarsh Dixit, Shivali Gupta and **Om Pal**, "Speedy Signature Based Intrusion Detection System UsingFinite State Machine and Hashing Techniques", *IJCSI International Journal of Computer Science Issues*, Vol. 9, Issue 5, No 2, September 2012.

23. Zia Saquib, Ravi Batra, **Om Pal**, Ashwin Nevangune, Dhiren Patel, and M. Rajarajan, "A Configurable and Efficient Key-Management scheme for SCADA Communication Networks", *International Journal of Research and Reviews in Information Security and Privacy (IJRRISP)*, Vol. 1, No. 2, June 2011.

24. Anupam Saxena, **Om Pal**, Sharda Saiwan and Zia Saquib, "Token based key management scheme for SCADA communication", *International Journal of Distributed and Parallel Systems (IJDPS),* Vol.2, No.4, July 2011.

25. **Om Pal,** Peeyush Jain, Sudhansu Goyal, Zia Saquib and Bernard L. Menezes, "Intrusion Detection Using Graph Support: A Hybrid Approach of Supervised and Unsupervised Techniques", *International journal of Advancements in Computing Technology*, Volume 2, Number 3, August, 2010 (Scopus indexed). Doi: 10.4156/ijact.vol2.issue3.12

Conference Publications:

1. Bebortta, Sujit, **Om Pal**, Dilip Senapati, and Subhranshu Sekhar Tripathy. "Cost-Aware Computation Offloading for Managing Cloud-Bursts in IoT-Based Cloud-

Fog Networks." In 2024 1st International Conference on Cognitive, Green and Ubiquitous Computing (IC-CGU), pp. 1-6. IEEE, 2024.

2. Om Pradyumana Gupta, Arun Prakash Agarwal, **Om Pal** "Evaluation of AI Algorithms used for Non-Masked and Masked Face Recognition", *International IEEE conference on advance computing and innovative technologies in engineering (ICACITES 2023)*, held on 12-13 May, 2023, Department of Computer Science & Engineering, Galgotia University, Greater Noida, India. Published/included in IEEE on 24 July 2023. DOI: 10.1109/ICACITE57410.2023.10183231.

3. Om Pradyumana Gupta, Arun Prakash Agarwal, **Om Pal** "A study on Evolution of Facial Recognition Technology", International *IEEE Conference on Disruptive Technologies (Icdt-2023)*, held on 11-12 May, 2023 GL Bajaj Institute of Technology and Management, Greater Noida, India. published/included in IEEE on 19 June, 2023. DOI: 10.1109/ICDT57929.2023.10150876

4. Ritesh Kumar Dwivedi, Parma Nand, **Om Pal** "Neural Machine Translation and detailed analysis of impact of pre-processing techniques for Indian regional languages", *International IEEE conference on advance computing and innovative technologies in engineering (ICACITES 2023)*, held on 12-13 May, 2023, Department of Computer Science & Engineering, Galgotia University, Greater Noida, India, published/included in IEEE on 24 July 2023. DOI: 10.1109/ICACITE57410.2023.10183148

5. Ritesh Kumar Dwivedi, Parma Nand , **Om Pal**, "Evolution of Machine Translation for Indian Regional Languages using Artificial Intelligence", International *IEEE Conference on Disruptive Technologies (Icdt-2023)*, held on 11-12 May, 2023, GL Bajaj Institute of Technology and Management, Greater Noida, India, published/included in IEEE on 19 June, 2023,. DOI: 10.1109/ICDT57929.2023.10150776

6. **Om Pal**, Surendra Singh and Vinod Kumar, "Blockchain Network: Performance Optimization", *International Conference on Advances and Applications of Artificial Intelligence and Machine Learning (ICAAAIML2021)*, held on 29-30 October, 2021 Sharda University, Greater Noida, India (**SCOPUS, Springer**: Lecture Notes in Electrical Engineering series, ISBN: 978-981-19-4831-2) . DOI: 10.1007/978-981-19-4831-2_55

7. **Om Pal**, Bashir Alam, "Key Management Scheme for Secure Group Communication", *2nd International Conference on Data & Information Sciences (ICDIS-2019)*, Agra, India, 29-30 March 2019 (**SCOPUS, Springer**: Lecture Notes in Network and Systems, ISBN: 978-3-030-30577-2). DOI:10.1007/978-981-15-0694-9_17

8. **Om Pal**, Bashir Alam , "Key Life Cycle and Estimation of Time for Revocation of Keys in Cryptographic Systems", *International Conference on Emerging Trends in Information Technology (ICETIT-2019)*, New Delhi, India, June 2019 (**SCOPUS, Springer**: Lecture Notes in Electrical Engineering, ISBN: 978-981-15-0694-9). DOI: 10.1007/978-3-030-30577-2_91

9. **Om Pal**, Sharda Saiwan, Peeyush Jain, Zia Saquib, Dhiren Patel "Cryptographic Key Management for SCADA System: An Architectural Framework " published at 2009 **IEEE International Conference** on Advances in Computing, Control, and Telecommunication Technologies, Trivendrum, India, 28-29 December, 2009. DOI: 10.1109/ACT.2009.51

10. Pramod Kumar Siddharth, **Om Pal**, Bashir Alam, "A Homomorphic Encryption Scheme Over Integers Based on Carmichael's Theorem", **IEEE International Conference** on Electrical, Electronics, Communication, Computer and Optimization Techniques (ICEECCOT), Mysore, India, December 2016. DOI:10.1109/ICEECCOT.2016.7955178

11. **Om Pal**, , Anupam Saxena, Zia Saquib, and Bernard L. Menezes, "Secure Identity-Based Key Establishment Protocol", International Conference on Advances in Communication, Network, and Computing, Bangalore, India, March 2011 (**SCOPUS, Springer**: Communications in Computer and Information Science, ISBN: 978-3-642-19541-9). DOI: 10.1007/978-3-642-19542-6_121

12. **Om Pal**, Anupam Saxena, Uttam Kumawat, Ravi Batra and Zia Saquib" Secure Group Deffie-Hellman Key Exchange with ID Based Cryptography", International Conference on Advances in Communication, Network, and Computing, Bangalore, India, March 2011 (**SCOPUS, Springer**: Communications in Computer and Information Science, ISBN: 978-3-642-19541-9). DOI: 10.1007/978-3-642-19542-6_96

13. Anupam Saxena, **Om Pal**, Zia Saquib "Public Key Cryptography Based Approach for Securing SCADA Communications", International Conference on

Advances in Communication, Network, and Computing, Bangalore, India, March 2011 (**SCOPUS, Springer**: Communications in Computer and Information Science, ISBN: 978-3-642-19541-9). DOI: 10.1007/978-3-642-19542-6_10

14. **Om Pal**, Bashir Alam, " How to report cyber crimes in Indian territory", International Conference on Emerging Trends in Engineering, Technology, Science and Management, Greater Noida, 12th April 2017 (ISBN: 2394-1537).

15. Vinay Thakur, M N Doja, Tanvir Ahmad, Ganesh Khadanga, **Om Pal** "Interoperability Issues and Data Models In Integrating Bland Administration Systems in India" International conference on E-Governance & Education Transforming lives for e-living (January 2020), Amity University, Noida, India.

Book Chapters:

1. Hamid, M., Alam, B. & **Pal, O** (2025) "**Book Chapter**: Quantum Artificial Intelligence for Cyber Threat Mitigation and Enhanced Cyber Defense. *Book: Quantum Algorithms for Enhancing Cybersecurity in Computational Intelligence in Healthcare* (under publication) by CRC Press (Taylor & Francis Group) to be indexed in Scopus database.

2. **Om Pal**, Manoj Jain, B.K. Murthy, Vinay Thakur "**Book Chapter**: Quantum and Post Quantum Cryptography" in "**Book:** *Cyber Security and Digital Forensics: Challenges and Future Trends(*ISBN: 978-1-119-79563-6)", January 2022 published by Wiley and indexed in Scopus database. Doi.org/10.1002/9781119795667.ch2

3. Om Pal, Vinod Kumar, Vinay Thakur, Basir Alam "Book Chapter: Quantum Computing: A Global Scenario" in "**Book: Cyber Security Using Modern Technologies"**, published by CRC Press (Taylor & Francis Group) indexed in Scopus database. ISBN 9781032213194, August 2, 2023.

4. Gupta, K., Kumar, V., **Pal, O**., "**Book Chapter**: Effective Key Agreement Protocol for Large and Dynamic Groups Using Elliptic Curve Cryptography**"** in " **Book: Cyber Security Using Modern Technologies** ″, published by CRC Press (Taylor & Francis Group) indexed in Scopus database. ISBN 9781032213194, August 2, 2023.

5. Kumar, V., **Pal, O**., Upadhyay, N., & Bhardwaj, M., "Book Chapter: Computation and storage efficient key distribution protocol for secure multicast communication in centralized environments" in **Book: Cyber Security Using Modern Technologies** ", published by CRC Press (Taylor & Francis Group) indexed in Scopus database. ISBN 9781032213194, August 2, 2023.

6. Hamid, M., Alam, B., **Pal, O**.& Qamar, S. (2023). Investigating Classification with Quantum Computing. *In Book: Intelligent Data Analytics, IoT, and Blockchain*. Published by Auerbach Publications. ISBN 9781003371380. DOI: https://doi.org/10.1201/9781003371380

Total work Experience: 20 Years 4 months

   Experience at level 13A (PB-4, AGP-9000):   May 2023 to till date

   Experience at level 12 (PB-3, GP-7600):   3 Year and 4 months

   Experience at level 11 (PB-3, GP-6600):   8 years and 6 months

   Experience at level 10 (PB-3, GP-5400):   3 years and 10 months

   Experience at consolidated salary   :   4 years and 8 months

1. **May, 2023 to Till date: Working as an Associate Professor, Department of Computer Science, University of Delhi (Central University), North Campus, Delhi-110007**

   Role: Academic and research work.

   Teaching: Undersigned taught/teaching the following subjects-

   (a) **Teaching PhD students:**

   (i) Taught the Research Methodology (RCS001) course to new admitted PhD students (May-Aug 2023 session and Jan-June 2024 session).

   (ii) Taught the Research and Publication Ethics (RCS100) course to new admitted PhD students (May-Aug 2023 and Jan-June 2024 session).

(iii) Taught Information Security(RCS009) Pre-PhD course to new admitted PhD students (July- Dec 2023 session).

(iv) Taught the "Introduction to parallel programming with OpenMP and MPI(RCS024)" to PhD students (Jan-June 2024 session).

(b) **Teaching MSc students**:

    (i)   Taught Information Security (MCSC103) course to MSc students (Jul-Dec 2023 session and Jul-Dec 2024 session).

    (ii)   Taught (Partially) Cyber Security course to MSc students (Jul-Dec 2023 session).

(c) **Teaching MCA students**:

    (i)   Taught Statistical Methods (MCAO204) course to MCA students (Jan-Jun 2024 session).

    (ii)   Taught Quantum Computing (MCAE312) course to MCA students (Jul-Dec Session 2024).

(d) **Teaching B.Tech students**:

    (i)   Taught Fundamental of Computer Programing (FCP) course to B.Tech students at Faculty of Technology for Jul-Dec 2023 session.

MSc/MCA/M.Tech project Supervision:

(i)   Supervised 21 MCA students for their final semester project work.

(ii)   Supervised 15 MSc students (for 2023-2024 session) for their minor/major projects in field of Cryptography, Post-Quantum Cryptography, Cyber Security standards for Multi-server environment, Blockchain, Secure Smart e-Healthcare System, Secure metering infrastructure etc.

(iii) Mentoring Mr Varun Sirpal for his M.Tech (Software Engineering) programme at BITS, Pilai.

Research Projects:

(i) Submitted Cybersecurity related proposal to MeitY for Information Security and Education Awareness (ISEA) programme phase-III. Government of India has selected University of Delhi as a Spoke Institute for ISEA-III activities.

(ii) Initiated the process of submission of proposal for Visvesvaraya PhD seats (for 2024-2025 session) to MeitY. The proposal submitted successfully and University of Delhi got 5 Visvesvaraya PhD fellowships of budget of Rs. 1,91,56,000/ (PhD-02/2024-05/31 dated 06.03.2024) from MeitY, Govt of India for the year 2024.

(iii) Initiated the process of submission of proposal for Visvesvaraya PhD seats (for 2023-24 session) to MeitY. The proposal submitted successfully and first time Department of Computer Science, University of Delhi got 5 Visvesvaraya PhD fellowships of estimated budget of 1.9 crore (PhD-02/2022-39/2023/38 dated 18.08.2023) from MeitY, Govt of India for the year 2023.

(iv) Received project research Grant of Rs. 4,00,000/ (Four Lakhs only) from IoE, University of Delhi for Development of Secure and Efficient Cyber Security protocols for Smart e-Healthcare Systems (Ref. No./IoE/2023-24/12/FRP, Dated: 31.08.2023).

(v) Received project research Grant of Rs. 5,00,000/ (Five Lakhs only) from IoE, University of Delhi for Development of a Lightweight Communication Protocol for the Internet of Drones (IoD) (Ref. No./IoE/2024-25/12/FRP, Dated: 30.08.2024).

Other miscellaneous initiatives/responsibilities:

(i) Nodal officer, Department of computer science, Competence Enhancement Scheme (CES), Institute of Lifelong Learning, University of Delhi.

(ii) Project Coordinator & Placement Advisor, Department of Computer Science.

(iii) Coordinator Sports, Department of Computer Science.

(iv) Involved in M.Tech (Computer Science) programme proposal submission to AICTE.

(v) Initiated the proposal for making DU as a nodal centre for 'High Performance Computing'. CDAC has offered remote access of Super computer (installed at Pune) for faculty members, Research scholars and students of DU.

(vi) To secure the infrastructure of University of Delhi, initiated the proposal for deployment of Security Information and Event Management (SIEM) solution of

C-DAC Mohali. Hopefully deployment of SIEM solution and Master training for DU staff would be done soon.

(vii)   Involved in syllabus updation for Under Graduate courses (Design Analysis of Algorithms, Network Security etc).

(viii)   Involved in syllabus design for M.Tech programme.

(ix) Involved in equipment finalization for lab setup for B.Tech Programme.

(x) Course Coordinator for 'Research Methodology' and 'Research and Publication Ethics' subjects for PhD students.

(xi) Trekking Coordinator for Nag Tibba trek (10-13 March, 2024) for MCA/MSc/PhD students.

(xii)   Visit Coordinator for Amrit Udhyan visit (01 March 2024) of MCA/MSc/PhD students.

Committee Memberships:

(iv) Nodal officer of Department of Computer Science for Viksit Bharat@2047.

(v) Purchase committee FoT, University of Delhi

(vi) Purchase committee Department of Computer Science, University of Delhi

(vii)   Departmental Research Committee (DRC), Department of Computer Science, University of Delhi

(viii)   Admission Team MCA, 2023-2024 session.

(ix) NAAC accreditation team, Department of Computer Science, University of Delhi

(x) Screening committee for selection of Asst Professors.

(xi) PhD admission committee.

PhD Thesis Evaluated:

(i) Enhance the Quality of Recommender Systems Using Collaborative Tagging, 2024, Noida International University Plot No. - 1, Sector 17 A, Yamuna Expressway, GB Nagar, UP.

(ii) Improved Social Media Account Analysis System Utilizing Big Data and Machine Learning Techniques, 2025, SRM Institute of Science and Technology (Deemed to be University), Kattankulathur.

2. **May, 2014 to May, 2023: Worked as a Scientist in Ministry of Electronics and Information Technology, Government of India**

Role: He evolved and worked on many research projects of national interest. He was involved in drafting/revision of **Personal Data Protection Bill 2019, Non-Personal Data Framework and Drafting of Digital Personal Data Protection Bill, 2022**. He was also involved in drafting of R&D policies, monitoring the progress of R&D projects, screening/short listing/evaluation of new R&D proposals etc.

Projects: Handled following projects as a **Member Secretary / Member Convener** in field of Quantum Cryptography, Cryptography, Blockchain Technology, Information Security etc.

Sr. No	Project	Implementing Agency	Budget	Date of initiation	Duration	Objective
1	Post-Quantum Digital Signatures for Document Signing	SETS Chennai	127.76 lakhs	19-11-2019	2 Years	The main objective of the project is to analyze, implement, benchmark and also design digital signature schemes which are resilient to attacks by quantum computers.
2	An Efficient Distributed Framework for Smart Contract Execution in Blockchain Systems	IIT Hyderabad	59.99 lakhs	28-02-2020	2 Years	The main objective of the project is to develop an Efficient Distributed and Secure framework for the Execution of Smart Contracts in Blockchains by making each peer in the system parallel and distributed.
3	Development of Tool(s) for Enabling Binary Program Analysis	C-DAC Hyderabad and SASTRA deemed-to-be-university	106.23 lakhs	06-06-2019	2 Years	Development of translation tool(s) (prototype) for converting assembly code to LLVM (open-source compiler

#	Title	Institute	Amount	Date	Duration	Description
						infrastructure for lifelong program analysis) IR (Intermediate Representation) for MIPS architecture.
4	Multi-Modal Analytics Framework for Machine-Assisted Diagnosis of Pediatric Pneumonia	C-DAC Mohali	149.85 lakhs	04-03-2020	3 Years	To develop an artificial intelligence based multi-modal data analytics framework for estimation of features indicating probability of pediatric pneumonia; that can aid on-site diagnosis of pediatric pneumonia by a non-specialist medico.
5	A Prototype of Autonavigating E-Cart using Multispectral Imaging	IIIT Manipur	40 lakhs	18-02-2019	3 Years	An upgraded prototype E-Cart which can navigate by itself in complex environment through a series of maneuvers will be the main product of this project.
6	Enhancement & Field Testing of Digital Solutions for the Weavers/ Designers of NE Region (Mizoram).	DIC	40.07 lakhs	28-11-2018	2 Years	Enhancement & Field Testing of Digital Solutions for Embroidery Artisans and Weavers.

7	Design a secure authenticated encryption algorithm for lightweight applications	Amrita Vishwa Visyapeetham, Coimbatore, Tamil Nadu	31.64 lakhs	October 2015 (Completed)	2 Years	The objective of the project is to design a secure authenticated encryption algorithm for lightweight applications. This algorithm could be implemented on a variety of lightweight platforms like mobile devices, smart cards, RFID devices etc.
8	Development of Security Solution for defense against attacks in Virtualization and Hypervisor technologies for Cloud Computing	C-DAC, Bangalore	336 lakhs	16.03.2015 (Completed)	2 Years	The objective of the project is to design and develop hypervisor security components to provide defenses against the identified runtime attacks to ensure confidentiality in the Virtualization and Hypervisor layers of Cloud computing infrastructures.
9	Development of e-portal for Modified Special Incentive Package Scheme (Phase-II)	C-DAC Noida	85 lakhs	January 2017 (Completed)	2 years	Development of e-Portal for efficient management of proposals received under MSIPS.

Drafting of National Strategy Policy Papers:

Undersigned was involved in drafting of following national strategy papers-

(i) Strategy paper on Quantum Computing and Quantum Cryptography

(ii) National Strategy on Blockchain

(iii) Strategy paper on AR/VR

(iv) Strategy paper on Robotics

(v) Strategy paper on Drone Technology

Setup of Quantum Computing Lab in collaboration of MeitY and Amazon Web Services:

Undersigned was involved in evaluation of received Quantum computing proposals and participated in review meetings.

Examination of Cabinet Notes (Government of India):

Examined and prepared the report of various Cabinet Notes received from other Ministries-

- Compared the parameters of present National Digital Communication policy with the proposed National Digital Communication Policy-2018 and **suggested the required changes for enhancement of digital security**.

- Analyzed the Cabinet note 'Signing of Memorandum of Understanding (MoU) on Collaborative Research on   Distributed Ledger and Block chain Technology in the context of Development of digital economy by EXIM Bank under BRICS Interbank Mechanism' and **Proposed for building the inter-countries appropriate forum for resolving the cyber disputes.**

- **Proposed the inclusion of cyber security framework** in **Draft Cabinet Note "National Energy Storage Mission"** received from Ministry of New and Renewable Energy for protection of connected energy storage systems.

Other Contributions / Responsibilities:

- Prepared a comparative study report on Non-Personal Data Framework (NPD) report Ver2(Dec 20) and Ver2(final July 21) release by the committee headed by Infosys co-founder Shri Kris Gopalakrishnan.

- Involved in setup of Data Strategy Unit (DSU) in MeitY for improvement of Data Governance Quality Index (DGQI).

- Drafted FAQs for efficient Blocking request under Section 69A and 79(3)(b) of IT Act 2000.

- Evaluated more than 50 PhD thesis under Visvesvaraya PhD Scheme for best PhD award.

- Drafted inputs for Standardization efforts on Quantum Information Technology (QIT) for International Telecommunication Union (ITU).

- Supervised four summer internship trainees in field of information security.

- Involved in preparation of **Annual Report of MeitY**: Annual Report provides glimpse about MeitY, attached bodies of MeitY, scenario of Electronics and IT-ITeS industry, assessment of the technical projects and schemes of MeitY and foresight for the future course of action.

- Administrative coordination of NIELIT (an autonomous society of MeitY) activities.

- CPIO for R&D in IT Group of MeitY.

- CPIO for Data Governance Division of MeitY.

- Sub-Appellate Authority for Public Grievances in the Data Governance Division of MeitY.

- Evolved the research project "Setting up of Centre of Excellence (CoE) in the field of Industry 4.0 (AI, Robotics, Drone, IIoT. etc.,) at Visakhapatnam". In-principle Secretary, MeitY has approved the research proposal.

- Involved in Cyber Law activities including Court Cases

- Blocking of URLs under Sect 69A of IT Act 2000

- Parliament matters, prepared draft replies for parliament questions (Lok Sabha and Rajya Sabha)

- Preparation of draft replies and PPTs for PMO office matters.

- Inter-ministerial and International Cooperation matters

- Analysis and report preparation on world-wide personal Data Protection Bills, Acts, reports, research articles etc.

- Involved in drafting of proposal on "Data Protection awareness generation and capacity building programme.

- Undersigned visited border area of Changlang district of Arunachal Pradesh and submitted a detailed report on challenges and socioeconomic conditions of the people living in the border villages of Changlang district to MeitY and MHA for suitably incorporating the report in the Government schemes/programmes.

3. **March 2006 to May 2014: Worked in C-DAC**

Undersigned worked at Centre for Development of Advanced Computing (C-DAC) as a Sr. Technical Officer and Staff Scientist. During tenure at C-DAC, undersigned worked as a team member in research projects and worked as a Sr. Lecturer in academic.

Projects:

Undersigned worked in following research projects during stay at C-DAC-

(i) **Basic Archival Solution for e-courts:** The information being maintained has been deemed to need Long Term Preservation, even if the OAIS (Open Archival Information System) itself is not permanent. Long Term is long enough to be concerned with the impacts of changing technologies, including support for new media and data formats, or with a changing user community. Long Term may extend indefinitely.

(ii) **Netra:** Netra is a statistical anomaly detection system to detect intrusion in network, where the normalcy of the network traffic is learnt first and intrusion to the network are identified based on the abnormal behavior in the network traffic.

For detecting the attack on the basis of traffic variation, we used the Chi-Square technique. By using this technique, Netra first learns the normalcy of the network and on the basis of set threshold, it detects the attack for known as well as unknown signatures. In detection phase it also updates its profiling database by using the concept of exponential moving average for better future learning.

(iii) Research and Development in Cyber Security for Critical Infrastructure:
When software was designed for use in critical infrastructure, security was not an issue as private networks were used for communication. But due to connectivity of SCADA (Supervisory Control and Data Acquisition) system with the out side world through TCP/IP networks in modern plants, and terrorist attacks on the critical infrastructures, the need of adding the security layer to SCADA protocols was felt. In this project, we proposed a new protocol called Sec-Key-D which make present day SCADA protocols like DNP3 safe and secure.

Courses Taught (MCA/B.Tech Level):

Undersigned taught following academic subjects during stay at C-DAC-

(i) Network Security & Cryptography
(ii) Design & Analysis of Algorithms
(iii) Theory of Automata
(iv) Discrete Mathematics
(v) Information Theory & Coding
(vi) Operation Research
(vii) Database Management System

4. **May 2005- March 2006: Worked as an IT Resource person in NTPC**

    Worked as an IT Resource Person at NTPC Korba plant. During stay at NTPC, undersigned managed the HRMS software and query generation using People–soft software.

5. **January 2003-May 2005**: Worked as a Computer Instructor for Fundamental of Computer, C, Data Structure subjects at NICT Computer centre, Aliganj, Etah (UP).

Speaker / Session Chair in International Conferences:

1. Speaker for "Quantum Computing and Security" at "One Day Quantum TechTrends Symposium 2024" organized by C-DAC Noida and IIIT Delhi at IIIT Delhi on 30th September, 2024.

2. Keynote speaker "Opportunities and Security Challenges in Quantum Computing Technology" and session chair at 1st International Conference on Computational Intelligence for Security, Communication and Sustainable Development

organized by Dr. B. R. Ambedkar Institute of Technology, Port Blair, A&N Island, 5th - 6th August, 2024.

3. Session Chair and speaker "Quantum computing" at International Conference on Intelligent Computing and Communication Techniques (ICICCT-2024) organized by School of Computer and Systems Sciences, JNU, New Delhi, 28-29th June, 2024.

4. Session Chair and speaker "Post-Quantum Cryptography" at IEEE International Conference on Automation and Computation (AutoCom-2024) organised by Graphic Era Hill University, Dehradun, Uttarakhand, India, India held on 14th-16th-March 2024.

5. Given a speech on 'Quantum Computing and Quantum Cryptography' in International Conference on Intelligent Robotics, Mechatronics, and Automation System (IRMAS 2021) organized by, School of Mechanical Engineering (SMEC), VIT University, Chennai Campus, Chennai, Tamil Nadu, 26th March 2021.

6. Given a speech on 'Quantum Computing and Quantum Cryptography' in International Conference on Innovative Computing and Communication (ICICC-2021) jointly ;organized by Shaheed Sukhdev College of Business Studies, New Delhi, National Institute of Technology Patna and University of Valladolid Spain, February 20-21, 2021.

7. Given a speech on 'Quantum Cryptography' in International Conference on "Network and Cryptology" (NETCRYPT 2020) organized by School of Computer and Systems Sciences, JNU, New Delhi, 4-6 December, 2020.

8. Session Chair at IEEE International Conference on Computing, Communication, and Intelligent Systems (ICCCIS-2021) organised by School of Engineering and Technology, Sharda University, Greater Noida, Uttar Pradesh, India held on 19th-20th-Feb 2021.

9. Session Chair at International Conference on Communication and Computing Systems (ICCCS-2021) organised by ICARS New Delhi, India held on 5th - 7th February 2021.

10. Session Chair at International Conference on "Network and Cryptology" (NETCRYPT 2020) organized by School of Computer and Systems Sciences, JNU, New Delhi, 4-6 December, 2020.

11. Session Chair at International Conference on Advances and Applications of Artificial Intelligence and Machine Learning (Springer), Sharda University, Noida 30 October 2020.

12. Speech on Security for e-commerce in International Conference on Trends in e-Payments –Challenges and Opportunities, Sep. 28 – 20, 2010

Invited Talks delivered in FDPs:

1. Talk on '"Deutsch & Deutsch-Jozsa Algorithm" on 4th February, 2025 in FDP "Quantum Computing and Post-Quantum Cryptography" held from 3rd February to 9th February, 2025 at Department of Computer Science, University of Delhi.

2. Talk on "Simon's Algorithm" on 6th February, 2025 in FDP "Quantum Computing and Post-Quantum Cryptography" held from 3rd February to 9th February, 2025 at Department of Computer Science, University of Delhi.

3. Talk on 'Quantum security and opportunities' in FDP on "Quantum computing and Algorithms" in NIT Raipur, 7 -11 Oct 2024.

4. Talk on "High Performance Computing" under AICTE-SANKALP at Guru Tegh Bahadur Institute of Technology, IP University, 16 October 2024.

5. Talk on "Recent Innovations in Quantum Cryptography" at Delhi Technological University, 14 August 2024.

6. Talk on "Quantum computing & Post-Quantum Cryptography" at BSA College Mathura, 16 April 2024.

7. Talk on "Quantum Computing" at RKGIT, Ghaziabad, 20th March, 2024.

8. Talk on "Cybersecurity in Quantum Computing Era" in Cyber Suraksha Day at University of Delhi 2nd February, 2024.

9. Talk on 'Preparation of Research Proposals for Funding Agencies' in AICTE sponsored FDP on "Research Methodologies and Scientific Research Writing using LaTex (RMSRL-2024" in NIT Kurukshetra, 7th Jan 2024.

10. Talk on "Cybersecurity & Cyber Crime" in Delhi College of Arts and Commerce, University of Delhi 5th December, 2023.

11. Talk on "Exploring the evaluation of cybersecurity threats" in St. Stephen's College, University of Delhi 25th November, 2023.

12. Talk on "Information Security- Cyber Society, Basic security Concepts, Major Online Risks and Threats" in FDP "National Super Computing Mission) at TIT Agartala organized by C-DAC Silchar 3rd November, 2023.

13. Talk on "Overview of Digital Signature, Cyber Security Products & Solutions Demo" in FDP "National Super Computing Mission) at TIT Agartala organized by C-DAC Silchar 3rd November, 2023.

14. Talk on 'Cyber Security and preventive measures to deal with cyber crime' in FDP on " Cyber Security in the Era of Artificial Intelligence" organised by the Department of Computer Sciences, BGSB University Rajouri, Jammu and Kashmir, 18th Sept, 2023.

15. 'Cyber Security Workshop' organised by CSC, Academy, MeitY, 15th September, 2023.

16. Talk on 'Quantum Computing in Cyber Crime and Cyber Security' in FDP on "Workshop on Cyber Crime & Cyber Securityin Cyber security" organised by the UGC-Human Resource Development Centre, Jamia Millia Islamia, New Delhi, 20th February to 25th February, 2023.

17. Talk on 'Quantum Cryptography for Cyber Security' in FDP on "Workshop on Artificial Intelligence in Cyber security" in Department of Electronics and Communication, University of Allahabad, Prayagraj, 28th March 2022.

18. Talk on 'Preparation of Research Proposals for Funding Agencies' in AICTE sponsored FDP on "Research Methodologies and Scientific Research Writing using LaTex (RMSRL-2022" in NIT Kurukshetra, 12th March 2022.

19. Talk on 'Quantum Computing Security Challenges' in FDP on "Quantum Computing: Challenges and Opportunities" organized by Department of Information Technology, Meerut Institute of Engineering and Technology (MIET, Meerut, UP, India, 28th February, 2022.

20. Talk on 'Quantum computing and Quantum Cryptography' in AICTE (ATAL Academy) sponsored FDP on "Cyber Security" organized by School of Computer and Systems Sciences, JNU, New Delhi, 8th December, 2021.

21. Talk on 'Quantum computing' in AICTE sponsored FDP on "Emergence of Reversible & Quantum Logic Circuits" in ABESIT College Ghaziabad, UP, 23rd November 2021.

22. Talk on "Cyber Security" organized by Gopal Narayan Singh University, Bihar on 26th October, 2021.

23. Talk on "Cyber Crime and Cyber Security" organized by EUERA University, Lucknow on 14th December, 2021.

24. Talk on 'Preparation of Research Proposals for Funding Agencies' in AICTE sponsored FDP on " Research Confront and Document Preparation using LaTeX (RCDPL-2021)" in NIT Kurukshetra, 4th August 2021.

25. Invited talk on 'Quantum Computing and Quantum Cryptography' to Government officers in Cabinet Secretariat, Government of India, 28th July 2021.

26. Talk on 'Quantum Computing and Quantum Cryptography' in FDP on "Recent Trends in Cyber Security " organised by School of Engineering and Technology (SET), Sharda University, Noida, India, in association with Microsoft Center of Excellence (COE) on Cyber Security and Allied Technologies, 26th June 2021.

27. Talk on 'Preparation of Research Proposals' in AICTE sponsored FDP on "Research Confront and Document Typesetting using Latex:202X" in ABESIT College Ghaziabad, UP, 26th February 2021.

28. Talk on 'Preparation of Research Proposals for Funding Agencies' in AICTE sponsored FDP on "Research Confront and Document Typesetting using Latex:202X" in ABESIT College Ghaziabad, UP, 16th January 2021.

29. Talk on 'Reporting of Cyber Crimes and Need of Personal Data Protection' in AICTE (ATAL Academy) sponsored FDP on "Computer Forensics and Cyber Crimes" organized by Department of Computer Science & Engineering, JSS Academy of Technical Education, Noida, 19th December, 2020.

30. Talk on 'Quantum computing and Quantum Cryptography' in AICTE (ATAL Academy) sponsored FDP on "Cyber Security" organized by School of Computer and Systems Sciences, JNU, New Delhi, 25 November, 2020.

31. Invited talk on Quantum Cryptography to Government officers in Cabinet Secretariat, Government of India, 29th October 2020.

32. Talk on 'Progress in Quantum Computing and Quantum Cryptography' in ABESIT College Ghaziabad, UP, 12th September 2020.

33. Talk on 'Blockchain Technology' for UGC-HRD Mathematical and computational programme for Asst Professors at Jamia Millia Islamia, New Delhi, 9th February 2020.

34. Talk on 'Quantum computing and its applications' in FDP of ARKA JAIN University, Jamshedpur, Jharkhand, 21st July 2020.

35. Talk on 'Quantum Security' in FDP of ARKA JAIN University, Jamshedpur, Jharkhand, 23th July 2020.

36. Talk on 'Block chain Technology' in FDP of ARKA JAIN University, Jamshedpur, Jharkhand, 23th July 2020.

37. Talk on 'Modern Cryptography' in Xevier College of Engineering, Bandra(W), Mumbai.

38. Talk on 'IPR and WTO Issues' in CDAC Noida.

39. Expert Lecture on 'Security Awareness Program' at Maharaja Agrasen College of Engineering, Ghaziabad 9th November, 2011

40. Talk "Student Guidance for summer training" on 5th Sept, 2014 in Corporate Meet 2014 in Amity University, Sect 125, Noida

Membership in Research Committee (RC) and program Committee (PC):

1. Advisory Board Member for CSC Olympiads 4.0, CSC Academy.
2. Member in Departmental Research Committee (DRC), Department of Computer Science, University of Delhi.
3. Member in Research Advisory Committee (PhD Students), Jamia Millia Islamia (Central University), New Delhi.
4. PC Member in International Conference on Computing, Communication, and Intelligent Systems (ICCCIS)), 2021 organized by Sharda University, Greater Noida.
5. PC Member in International Conference on Advances and Applications of Artificial Intelligence and Machine Learning (ICAAAIML2021) held on 29-30 October 2021, Sharda University, Greater Noida.
6. Advisory Committee Member / Technical Program Committee Member in International Conference on Artificial Intelligence: Theory and Applications [AITA 2021] being organised by the Department of Electronics and Communication

Engineering, National Institute of Technology Patna (An Institute of National Importance under Ministry of Education, Government of India) held during 23rd – 24th December 2021.

External Examiner:

1. Performed the duty of external examiner for Practical/ Viva-Voce of B.Tech students for Compiler Design lab on 6th May, 2024 at Department of Computer Engineering, Jamia Millia Islamia.

2. Performed the duty of external examiner/judge for Hackathon held on 30th January, 2024 at Ram Lal Anand College, University of Delhi.

3. Performed the duty of external examiner for M.Tech practical examination on 29th, Nov 2023 at Department of Computer Engineering, Jamia Millia Islamia.

4. Performed the duty of external examiner for Practical/ Viva-Voce/ Project for 80 B.Tech students on 24th May, 2023 at Department of Computer Engineering, Jamia Millia Islamia.

5. Performed the duty of external examiner for M.Tech dissertation (04 students) on 3rd July, 2023 at Department of Computer Engineering, Jamia Millia Islamia.

6. Examined 45 summer internship reports and took viva of 45 students on 5th Sept, 2014 in Amity University, Sect 125, Noida.

7. Performed the duty of external examiner for Algorithm Analysis and Design Lab on 3rd Dec, 2014 for MCA (SE) students in USICT, GGSIPU, Sec- 16C , Dwarka, Delhi-110078 .

8. Evaluated the posters M.Tech students (CSE/ECE) of 5th Annual Research Showcase on March 13-14, 2015 as a Jury member at IIITD (www.iiitd.edu.in).

P.G. (M.Tech / MCA) Thesis Supervised:

1. Speedy Signature based Intrusion Detection System Using Finite State Machine and Hashing Techniques

2. Elimination of MIM attack in D-H Key exchange

3. Multi-factor Authentication

4. Identity based encryption

5. IDS using data mining techniques

6. Image steganography and Cryptography using LSB techniques

7. Development of Signcryption System

8. Analysis of complexities of prime number generation algorithms

9. Homomorphic Encryption

10. Optimization of Scalar Point Multiplication in Elliptic Curve Cryptography

11. Speculation optimization in Compiler

12. Analysis of path optimization techniques in Compiler

FDP/Workshop Attended:

1. Faculty Development Programme on *"Cyber Security, High Performance Computing, AI/ML and GenAI"* from 4 October to 6 October 2023, organized by Delhi University Computer Centre (DUCC), University of Delhi.

2. Faculty Development Programme on *"Cyber Security"* from 3 July to 7 July 2023, organized by ICT Academy at Delhi University Computer Centre (DUCC), University of Delhi.

3. Faculty Development Programme on *"Artificial Intelligence"* from 23 November to 27 November 2020, organised by Indian Institute of Information Technology and Management, Gwalior.

4. Faculty Development Programme on *"Cloud Technology"* from 9 November to 13 November 2020, organised by Information and Library Network (INFLIBNET) Centre, Gandhinagar.

5. Faculty Development Programme on *"Secure Internet of Things (IoT)"* from 17 October to 21 October 2020, organised by IIT Palakkad, Kerala.

6. Faculty Development Programme on *"Quantum Computing"* from 05 October to 09 October 2020 (ATAL-AICTE), organised by Center for Development of Advanced Computing, Mohali, Chandigarh.

7. Five days Faculty Development Programme on "*BlockChain & its Applications*" from 15 September 2020 to 19 September 2020, Organised by Department of Computer Engineering, Poornima Institute of Engineering &Technology, Jaipur, Rajasthan Technical University.

8. Five days *Online National Instructional Workshop on Cryptology* (22nd July 2020 to 26th July 2020), Jawaharlal Nehru University (JNU), New Delhi.

9. Attended one day IEEE workshop webinar on *"Engineers with good communications preferred by Industry -Enhance your technical communication skills with IEEE"*on 28th July 2020 organized by EBSCO Information Services India Pvt. Ltd.

10. Workshop on 'Large Scale Biometric *Identity Management Systems' (L-BIMS 2011) CDAC Mumbai, 20-21 January 2011*

11. *Workshop on CNIP (Critical National Infrastructure Protection) CDAC Mumbai December 2010*

12. *Workshop on Stress Management offered by CDAC Noida, 2012*

13. *HR Summit C-DAC Noida*

Conference Attended:

1. IEEE International Conference on Advances in Computing, Control, and Telecommunication Technologies 2009

2. "Secure Cities 2014" on September 10-11, 2014 at Hotel Le-Meridien, New Delhi.

3. Attended one day (25th Dec, 2014) National workshop on Good Governance day at Manakshow Centre, Delhi Cantt., Near Dhaula Kuan, New Delhi

4. One day (16th Jan 2015) open group seminar on 'Enterprise Architecture' at Room No. 1007, Conference room, Electronics Niketan, DeitY

5. Attended one day (26th August, 2014) seminar on Digital India at New Delhi

6. International Conference on Emerging Trends in Information Technology (ICETIT-2019), New Delhi, June 2019.

Research Papers Reviewed:

(i) Journal Papers

1. "A Secure Digital Evidence Preservation System for Smart Environment using IPFS, Blockchain, and Smart Contracts" for *Peer-to-Peer Networking and Applications*, 2024.

2. "Empowering Network Security through Advanced Analysis of Malware Samples: Leveraging System Metrics and Network Log Data for Informed Decision-Making" for *International Journal of Networked and Distributed Computing*, 2023.

3. Fortified MapReduce Layer: Elevating Security and Privacy in Big Data, *EAI Endorsed Transactions on Scalable Information Systems*, 2023.

4. Proposing a Mobile Government Enterprise Architecture Framework in Developing Countries: A Case Study in Vietnam" for *Electronic Government, an Int. J. (EG)*, 2023.

5. "Development of analytical offloading for innovative Internet of vehicles based on mobile Edge Computing", *Journal of Grid Computing*, 2023.

6. "The construction of national public security forensic examination and identification information system", *Journal of Forensic Science and Medicine*, 2020.

7. "Review of Blockchain Technology: A Bibliometric Analysis Using CiteSpace and VOSviewer", *Future Generation Computer Systems*, 2020.

8. "The Use of Blockchain in Online Copyright Cases in China", *Journal of Forensic Science and Medicine*, 2020.

9. "Electronic Data Preservation and Storage of Evidence by Blockchain", *Journal of Forensic Science and Medicine*, 2019.

10. "A sensor attack detection method in intelligent vehicles", *IEEE Transactions on Industrial Electronics*, year 2018.

11. "An efficient and authentication signcryption scheme based on elliptic curves", *Journal of Computer Science*, year 2018.

12. "Evaluation of NIZKP Protocol for Effective Authentication in IoT Environment", *Journal of Computer Science*, year 2018.

13. "Secure mechanisms for key shares in cloud computing" for International *Journal of Rough Sets and Data Analysis* (IJRSDA) –Apr 2017

14. "An efficient and provably secure two-party authenticated key exchange protocol using lattice-based cryptography" for *International Journal of Security and Communication Networks*, 2016.

(ii) Conference Papers Reviewed:

1. "LSTM Network Based Malicious Domain Name Detection: A Shared Task", 6th Int. Symposium on Security in Computing and Communications, Springer, August 2018.

2. "Algorithmically Generated Domain Detection and Malware Family Classification", 6th Int. Symposium on Security in Computing and Communications, Springer, August 2018.

3. "Design of Visual Cryptography Scheme using C(m, w) Combinations" for 5th International Conference on Frontiers in Intelligent Computing Theory and Applications (FICTA), 2016.

4. "An improved remote user password authentication scheme using smart card with Session key agreement" for International conferences IC3T 2016.

5. "Analysis of COVID-19 impact on Cardiovascular using ECG", ICAAAIML2020.

6. "Intrusion Detection Based on Decision Tree Using Key attributes of Network Traffic", ICAAAIML2020.

7. "Comparison of Various Data Center Framework", ICAAAIML2020.

8. "Multimedia Encryption and Decryption using Advanced Encryption Standard", ICAAAIML2020.

9. "Network Intrusion Detection using Clustering: A Data Mining Approach", ICAAAIML2020.

Other:

1. Guest of Honor at inaugural session of IEEE International Conference on Automation and Computation (AutoCom-2024) organised by Graphic Era Hill University, Dehradun, Uttarakhand, India, India held on 14th-163th-March 2024.

2. Guest of Honor in Valedictory Ceremony of International Conference on "Network and Cryptology" (NETCRYPT 2020) organized by School of Computer and Systems Sciences, JNU, New Delhi, 4-6 December, 2020.

3. Received the best Industry Guide Award from Amity University, Sect 125, Noida (Delivered the speech to B.Tech, MCA, M.Tech students on corporate meet on 5th Sept, 2014).

4. Distinguished guest at 4th International Conference on Advances and Applications of Artificial Intelligence and Machine Learning (ICAAAIML 2023), 28th-29th December 2023, Sharda University, Gr Noida.

Extra-Curricular Activities:

I am also a Runner. So far participated in multiple Half Marathons, Full Marathons and few Hill Races as well.

Declaration:

I hereby declare that the above written particulars are true to the best of my knowledge and belief. I assure to work sincerely and prepared to do hard work duly abiding to organization.

References

1. Prof. M.N. Doja

Director

Indian Institute of Information Technology(IIIT), Sonepa, Haryana

2. Prof. Bashir Alam

Professor

Department of Computer Engineering, Jamia Millia Islamia (Central University), New Delhi

3. Dr. Vinay Thakur

Special Director General

Bhaskaracharya National Institute for Space Applications and Geo-informatics (BISAG-N),

Ministry of Electronics & Information Technology (Government of India)

Electronics Niketan, 6, CGO Complex, Lodhi Road, New Delhi: 110003

Date: 2025   **(Dr Om Pal)**