



Contact Details: 9540344621

Academic Qualification: PhD, M.A.(Maths), M.E.(Software Engg.), CSIR JRF (Maths), GATE (Maths), SPM Call (Maths), UGC JRF (CS)

Positions Held: Assistant Professor

Specialisation: Network Security, Pure Mathematics

Research Interest: Cryptography, Digital Signature, Authentication, Wireless sensor network, Number theory, Algebra, Indian History of Mathematics, Vedic Maths

Publications (Most Cited):

1. P. Kumar, V. Sharma, "Cryptanalysis and Improvement of two provably secure certificates signature schemes" Published in *Jr. of Combinatorics, Information & System Sciences* (JCISS), Vol 42, 2017.
2. P. Kumar, V. Sharma, "Cryptanalysis of Efficient Certificateless Aggregate Signature Scheme" Published in *Global and Stochastic Analysis* Vol. 4 No. 1, 2017.
3. P. Kumar, V. Sharma, G. Sharma. "Certificateless Aggregate Signature Schemes: A Review" published in the proceedings of International conference on IEEE, held at Galgotia University, April 29-30, 2016, pp 531-536.
4. P. Kumar, V. Sharma., G. Sharma" On the Security of Certificateless Aggregate Signature Scheme in Vehicular Ad-hoc Networks" published in the proceedings of in International conference on IEEE, held at Galgotia University, April 29-30,2017 PP 1095-1098.
5. P. kumar, V. Sharma" On the Security of Certificateless Aggregate Signature Scheme used in Vehicular Ad-hoc Network", Published in the proceedings of international conference on Springer (SOCTA), held at Amity University, Dec 28-30, 2016.
6. Pankaj Kumar, Vishnu Sharma "A Comment on Efficient Certificateless Aggregate Signature Scheme" International conference on computing,

Communications and Automation held in Galgotias University held at 5-6 may 2017.

7. P. Kumar, V. Sharma, S.Kumari, X. Li, A. Kumar” A new certificateless aggregate signature scheme for Healthcare Wireless Sensor Network” published in Journal of Sustainable Computing, Informatics and Systems , Elsevier Journal Vol 18 .
8. P. Kumar, V. Sharma, “Collision Resistance Attack on Certificateless Signature Schemes in Vehicular Ad-hoc Networks”. published in International Journal of Pure and Applied Mathematics, Volume 118 No. 22 2018, 1441-1445.
9. P. kumar, S.kumari “An Efficient and Provably Secure Certificateless Aggregate Signature Scheme for Flying Ad-hoc Network using Batch Verification” in Journal of Cryptograpia (Communicated).
10. P. Kumar, V. Kumar, S. Rana “ECLAS: Chaotic based efficient certificateless signature scheme” in Journal of Peer to Peer.(communicated)
11. P. Kumar, V. Sharma, S. Kumari, X. Li , ”Secure CLS and CL-AS Schemes Designed for VANETs”. published in Journal of Super Computing, Springer Vol 74.
12. P. Kumar, V. Sharma, “Cryptanalysis of a Short Certificate-Based Signature” published in IEEE conference ICACCCN-2018 Galgotias University held at 12-13 Oct 2018.
13. P. Kumar, V. Sharma, “Cryptanalysis of a Certificateless Signature Scheme”. published in IEEE conference ICACCCN-2018 Galgotias University held at 12-13 Oct 2018.
14. P. Kumar, V. Sharma, “Cryptanalysis and further improvement of a certificateless aggregate signature scheme” published in IOSR Journal of Computer Engineering, 16(3) 2017.
15. P. Kumar, V. Sharma, “Cryptanalysis and Improvement of a Certificateless Aggregate Signature Scheme”. published in International Journal of Information, Security and Privacy.
16. V.Kumar, M.Ahmad, P.Kumar, “An Identity-Based Authentication Framework for Big Data Security” published in the conference ICCCN 2018, 29-30 march 2018 held at NITTTKR Mohali Chandigarh.
17. V. Kumar, M.Ahmad, P.Kumar,” The Cryptanalysis Of Provably Secure Authenticated Key Agreement Scheme For Distributed Mobile Cloud Computing Services” published in International Journal of Pure

and Applied Sciences.

18. V. Kumar, M.Ahmad, P.kumar, "A Study of Pairing-Free Identity-Based Mutual Authenticated Protocol for Cloud Computing" Int. Journal of Engineering Research and Application. (2017).
19. P kumar "An efficient Certificateless signature scheme using extended chaotic maps under Random Oracle Model" communicated in journal of soft computing.
20. P. kumar "ECLAS: An Efficient and Provably Secure Certificateless Aggregate Signature Scheme for Flying Ad-hoc Network using Batch Verification" communicated in IEEE transaction.
21. P. Kumar "An efficient CLAS for vehicular internet of things" published in studies in indian place names journal.
22. G.Singh , P. kumar, P.kumar, "Statistical Inference of a Competing Risk Model with Application to the Real Data Set" International journal of statistics and systems, 8(3),
23. P.Kumar, A. Kaur, P.Kumar "Effect of noise on the performance of clustering" IEEE conference 2010, 504-506.
24. SOFTWARE PROCESS IMPROVEMENT: INFLUENCE FACTORS PROBLEM, CAUSE, SOLUTION , IOSR Journal of Computer Engineering, 16(3), 74-78
25. P.kumar, P. Kumar, M. Dhariwal Load Balancing and Job Migration Algorithms for Autonomic Grid Environment GJCST-B, 14 (1).
26. S. Singh, S. Yadav, P. Kumar "Part-of-Speech (POS) Tagging Using Maximum Entropy Model" International Journal of Advanced Research in Computer Science and Software Engineering, 4(6)

Research Projects Completed/Ongoing:

M.Phil. Supervised:

Ph.D. Supervised:

Ph.D. Supervising:

Participation in Seminars/Conferences:

Presentations in international/national conferences:

1. Pankaj Kumar, "Historical Background of Operational Research and its application in various fields", presented in international conference on History of Mathematical Science and Symposium on Non-Linear Analysis, held at Kumaun University on May 16-19, 2011,
2. Pankaj Kumar, "Software Process Improvement Model ...Comparative Analysis" presented in International Seminar on role of Mathematics in Science and Engineering, held at Graphic Era University Dehradun on May 13-14, 2011.
3. Pankaj Kumar, "Mathematics before the Vedic Period" presented in International Seminar on History of Mathematics, held at Ramjas College (University of Delhi) Nov, 19-20 2012.
4. Pankaj Kumar, "Historical background of cryptography" presented in International Seminar on History of Mathematics, held at Ramjas College (University of Delhi) Nov, 27-28 2013
5. P. Kumar, V. Sharma, G. Sharma. "Certificateless Aggregate Signature Schemes: A Review" presented in International conference on IEEE, held at Galgotia University, April 29-30.
6. P. Kumar, V. Sharma, G. Sharma. "Cryptanalysis of a Certificateless Aggregate Signature Scheme" presented in International conference on IEEE, held at Galgotia University, April 29-30, 2016.
7. P. Kumar, V. Sharma, "A Comment on Efficient Certificateless Aggregate Signature Scheme" presented in International conference on IEEE, held at Galgotia University, may 5-6, 2017.
8. P. kumar, V. Sharma "Cryptanalysis of Efficient Certificateless Aggregate Signature Scheme" presented in International conference on Forum for Interdisciplinary Mathematics held in Manipal University Jaipur Dec 22-25, 2016.
9. P. kumar, V. Sharma "On the Security of Certificateless Aggregate Signature Scheme used in Vehicular Ad-hoc Network", presented in international conference on Springer (SOCTA), held at Amity University, Dec 28-30, 2016.
10. Pankaj Kumar, V. Sharma "Security Analysis of Certificateless Aggregate Signature Scheme" presented in International Seminar on History of Mathematics, held at Ramjas College (University of Delhi) april, 26-28 2017
11. Pankaj Kumar, V. Sharma "Review of Security Attacks in Certificateless Aggregate Signature Scheme" presented in International Seminar on History of Mathematics, held at Ramjas College

- (University of Delhi) April, 26-28 2017
12. Pankaj Kumar, V. Sharma "A study on identity based authentication protocol for cloud computing" presented in the proceeding of National Conference (ETCCBDA-2017), held at MDU Rohtak, Haryana 6 March 2017, PP 39-42.
 13. Pankaj Kumar, Vishnu Sharma "Cryptanalysis and further improvement of a certificateless aggregate signature scheme" presented in the proceeding of National Conference (ETCCBDA-2017), held at MDU Rohtak, Haryana 6 March 2017, PP 181-184.
 14. Pankaj Kumar, V. Sharma "Security analysis of certificateless signature scheme" presented in the international conference Silver Jubilee of Indian Society of Industrial and Applied Mathematics (ISIAM), 29-31 January 2016.
 15. P. Kumar, V. Sharma, "Collision Resistance Attack on Certificateless Signature Schemes in Vehicular Ad-hoc Networks". presented in National Conference on "Advances in Operations Research and Mathematical Sciences (AORMS-2018) held at 24-25 Feb 2018 Bijnor.
 16. P. Kumar, V. Sharma 'Energy Efficient Certificateless Signature Scheme for Healthcare Wireless Sensor Network' presented in International Conference on Sustainable Agriculture, Energy, Environment and Technology (Icsaeet-2018) held on February 24-25, 2018.
 17. P. Kumar, V. Sharma "Certificateless Aggregate Signature Scheme for Healthcare Wireless Sensor Network" presented in the conference ICAM 2018 held at Motilal Nehru College, Delhi from 19-20 February, 2018.
 18. P.Kumar, "An Identity-Based Authentication Framework for Big Data Security" presented in the conference ICCCN 2018, 29-30 march 2018 held at NITTTKR Mohali Chandigarh.
 19. P.Kumar "Secure CLS and CL-AS Schemes Designed for VANETs" presented in the conference "Applications of Graph & Network in Computational Studies, Bioinformatics & Engineering And their Technical Terminology" 16-18 march 2018, held at JNU Delhi.
 20. P. Kumar, V. Sharma, "Cryptanalysis of a Short Certificate-Based Signature" presented in IEEE conference ICACCCN-2018 Galgotias University held at 12-13 Oct 2018.
 21. P. Kumar, V. Sharma, "Cryptanalysis of a Certificateless Signature Scheme". presented in IEEE conference ICACCCN-2018 Galgotias University held at 12-13 Oct 2018.
 22. P.Kumar, "security attacks against newly constructed

efficient certificateless aggregate signature scheme” presented in the conference in innovation in management and technology 17 jan 2020 held at GINM delhi.

23. P.Kumar, “security analysis of certificateless signature scheme” presented in the conference recent trends in humanities, technology, management, and social development, 7-8 feb 2020 held at KIET ghaziabad.
24. P. Kumar “An efficient and secure certificateless signature scheme for vanet” 19-21 Dec 2019, in ICAM held at Ramanujan Delhi.
25. P. Kumar, “collision resistance attack against efficient certificateless aggregate signature scheme”, in FIAM, 21-22 Dec, 2019 held at galgotias college, Greater Noida.
26. P. Kumar “cyber security: A necessary part of life” in Role of media in social transformation, 18-19 2020 jan, MDU Rohtak.
27. P. Kumar “An efficient CLAS for healthcare IOT” in NCMBS in DCRUST Murthal, 26-27 feb 2020.
28. P.kumar “An environment friendly security framework for Healthcare Sensor Network”
29. P.Kumar “A new security model for healthcare” in empowering in education system during covid 19, 2-3 may 2020. (online)

Short term course/ attended workshop/attended conference:

- 1) One week short term course on recent development and challenges in internet of things (RDCIOTS), July 3-8 2017, held at department of computer science, NIT Kurukshetra.
- 2) One week short term course on advances in image processing and remote sensing, March 6-10 March 2017, held at department of computer science, DCRUST, Murthal.
- 3) Attend international conference on advances in smart material and emerging technologies organized by IGDTUW Delhi held at 23-24 Jan 2020.
- 4) Attend national conference on advanced in computer and information technology organized by SPM college Delhi 19-29 Dec 2016.
- 5) Attend one day workshop on computational optimization in Sri Venkateswara College Delhi, held on 5 Feb 2016.
- 6) Attend two day faculty development program on computer algebra system and latex held in Feb 16-17, 2017 organized by Shyamlal College Delhi.
- 7) Attend Webinar “COVID 19 Pandemic: Challenges and Recent Advancements” held at 25-26 April on JNU Delhi.

- 8) Attend Webinar on “Role of III cells in bridging the gaps between industry and institute in COVID 19” 28 may 2020 Rajasthan.
- 9) Attend Webinar on “Automata Theory and its Applications” organized by Computer Science ARASU engineering College at 28 may 2020.
- 10) Attend Webinar on ““Impacts of COVID-19” organized by Department of Information Technology, Shri G. S. Institute of Technology & Science, Indore (M.P.) 3 may 2020.
- 11) Attend Webinar on “Modeling and Design of Low Cost Group IV based Photo Detector”, Vaagdevi Engineering College 16 may 2020.
- 12) Attend Webinar on “Modeling and Design of Low Cost Group IV based Photo Detector”, Vaagdevi Engineering College 16 may 2020.
- 13) Attend Webinar on “Machine Vision and Digital Twins using Embedded AI and Tiny ML” organized by Department of Information Technology, Shri G. S. Institute of Technology & Science, Indore (M.P.), 19 June.
- 14) Two week faculty development program on Cyber Security, 08-19 June 2020 at NITTTR. (Online)
- 15) One week faculty development program Image and Embedded Processing, 11-15 may at NITTTR. (Online)
- 16) One week faculty development program Internet of Things, 15-19 April 2020, Department of Computer Science at NITTTR. (Online)
- 17) One week faculty development program Linux Applications in Engineering Education, 27-01 may 2020 at NITTTR. (Online)
- 18) One week faculty development program Neural Networks and CNN, 20-24 april 2020 at NITTTR. (Online)
- 19) One week faculty development program Open Source Cyber Security Tools, 18-22 May 2020 at NITTTR. (Online)
- 20) One week faculty development program Quantum and Energy Materials: Potential & Applications, department of Applied Science 4-8 May 2020 at NITTTR. (Online)
- 21) One week faculty development program “The Growing Role of IOT in Latest Technological Trends, Department of computer science on 22-26 june 2020 at School of Information Technology, Rajiv Gandhi Proudhyogiki Vishwavidyalaya, Bhopal. (Online)
- 22) One week faculty development program ‘MOOC and E-learning Technologies’ 10-15 April 2020 on MDU Rohtak. (Online)
- 23) One week faculty development program ‘Global

Pandemic outbreak:: Role of technology and automation” 01-05 june 2020 at department of computer science on JSS technical university of education Noida. (Online)

- 24) Three week online course on TTT Teach the teacher using Flipped Classroom approach. From Thakur shyamnarayan college of engineering and research. (Online)
- 25) One week faculty development program ‘emerging technology in computer science” 28-02 june 2020 at department of computer science on MGR Educational and Research Institute. (Online)
- 26) One week faculty development program ‘Control Theory and Applications” 29-03 july 2020 at Vignan Institute of Technology & Science. (Online)
- 27) Attend international Workshop on “Geometry of Continued Fractions: Ramanujan and his successors organized by Department of Mathematics Central University of Himachal Pradesh at 14-15 Sep 2020. (Online)
- 28) One week faculty development program ‘Technology and Innovation in Math Department” 14-18 Sep 2020 at Anand international college of Engineering. (Online)

**Membership of Learned Societies/
Professional Bodies:**

Ramanujan Mathematical Society (RMS), International Association of the Engineers (IAENG), International Association of Computer Science and Information Technology (IACSIT)

Awards & Honours Received:

Others: