

# Dr. Pawan Singh Mehra,

## B.E., M.Tech, Ph.D.

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## Area of Interest

- 📌 Internet of Things (IoT)
- 📌 Wireless Sensor Networks(WSN)
- 📌 Quantum Computing
- 📌 Blockchain
- 📌 Artificial Intelligence
- 📌 Unmanned Aerial Vehicles (UAV)
- 📌 Secure Communication
- 📌 Information Security

## Research Publications

### JOURNALS

- [19] Chawla,D., **Mehra, P.S.**: "A roadmap from classical cryptography to post-quantum resistant cryptography for 5G-enabled IoT: Challenges, opportunities and solutions", *Internet of Things*, Elsevier, **2023**, (SCIE Indexed, IF-5.9 ).<https://doi.org/10.1016/j.iot.2023.100950>.
- [18] Sharma,J., **Mehra, P.S.**: "Secure Communication in IOT-based UAV Networks: A Systematic Survey", *Internet of Things*, Elsevier, **2023**, (SCIE Indexed, IF-5.9 ).<https://doi.org/10.1016/j.iot.2023.100883>
- [17] Chawla,D., **Mehra, P.S.**: "A roadmap from classical cryptography to post-quantum resistant cryptography for 5G-enabled IoT: Challenges, opportunities and solutions", *Internet of Things*, Elsevier, **2023**, (SCIE Indexed, IF-5.9 ). <https://doi.org/10.1016/j.iot.2023.100949>.
- [16] Gami,B., Agrawal,M., Mishra,D.K., Quasim,D., **Mehra, P.S.**: "Artificial intelligence-based blockchain solutions for intelligent healthcare: A comprehensive review on privacy preserving techniques", *Transactions on Emerging Telecommunications Technologies*, Wiley, **2023**, (SCIE Indexed, IF-3.6), <https://doi.org/10.1002/ett.4824>.
- [15] Chawla,D., **Mehra, P.S.**: "A Survey on Quantum Computing for Internet of Things Security ", *Procedia Computer Science*, Elsevier, **2023**,(Scopus Indexed),<https://doi.org/10.1016/j.procs.2023.01.195>.
- [14] **Mehra, P.S.**: "LBECR: Load balanced efficient clustering and routing protocol for sustainable Internet of Things in smart cities", *Journal of Ambient Intelligence & Humanised Computing*, Springer, **2022**, (SCIE Indexed, IF-7.104), <https://doi.org/10.1007/s12652-022-03706-2>.
- [13] Rathore,R.K., Mishra,D.,**Mehra, P.S.**,Yadav,O.P., Hashim,A.S., Shapi, A., Ciano,T., Shutaywi,M.: "Real-world model for bitcoin price prediction", *Information Processing & Management*,59(4),pp. 102968 Elsevier, **2022**, (SCIE Indexed, IF-8.6), <https://doi.org/10.1016/j.ipm.2022.102968>.

- [12] Jain, K., **Mehra, P.S.**, Dwivedi, A.K., Agarwal, A.: "SCADA: Scalable Cluster-based Data Aggregation Technique for Improving Network Lifetime of IoT based Wireless Sensor Networks", *The Journal of Supercomputing*, Springer, **2022**, (SCIE Indexed, IF-3.3), <https://doi.org/10.1007/s11227-022-04419-1>.
- [11] **Mehra, P.S.**: "E-FUCA: enhancement in fuzzy unequal clustering and routing for sustainable wireless sensor network", *Complex & Intelligent Systems*, 8, pp.393-412, Springer **2021**, (SCIE Indexed, IF-5.8), <https://doi.org/10.1007/s40747-021-00392-z>.
- [10] Dwivedi, A.K., **Mehra, P.S.**, Yadav, O.P., Doja, M.N., Alam, B.: "EETSP: Energy Efficient Two Stage Routing Protocol for Wireless Sensor Network Assisted Internet of Things", *International Journal of Communication Systems*, 34(17), pp.e4965, Wiley **2021**, (SCIE Indexed, IF-2.1), <https://doi.org/10.1002/dac.4965>.
- [9] **Mehra, P.S.**, Mehra, Y.B., Dagur, A., Dwivedi, A.K., Doja, M.N., Jamshed, A.: "COVID-19 suspected person detection and identification using thermal imaging based Closed Circuit Television (CCTV) camera and tracking using drone in Internet of Things", *International Journal of Computer Applications in Technology*, 66(3-4), pp.340-349, **2021**, (Scopus Indexed), <https://doi.org/10.1504/IJCAT.2021.120461>.
- [8] Dwivedi, A.K., Sharma, A.K., **Mehra, P.S.**: "Energy efficient sensor node deployment scheme for two stage routing protocol of wireless sensor networks assisted iot," *ECTI Transactions on Electrical Engineering, Electronics, and Communications*, 18(2), pp.158-169, **2020**, (Scopus Indexed), <https://doi.org/10.37936/ecti-eec.2020182.240541>.
- [7] Dwivedi, A.K., Sharma, A.K., **Mehra, P.S.**: "Energy-Aware Routing Protocols for Wireless Sensor Network Based on Fuzzy Logic: A 10-Years Analytical Review," *Transactions on Energy Web*, 21, pp.e1 **2020**, (Scopus Indexed), <https://dx.doi.org/10.4108/eai.6-10-2020.166548>.
- [6] **Mehra, P.S.**, Doja, M.N., Alam, B.: "Fuzzy Based enhanced cluster head selection (FBCES) for WSN," *Journal of King Saud University-Science*, 32(1), pp.390-401, Elsevier, **2020**, (SCIE Indexed, IF-3.8), <https://doi.org/10.1016/j.jksus.2018.04.031>.
- [5] **Mehra, P.S.**, Doja, M.N., Alam, B.: "Enhanced clustering algorithm based on Fuzzy Logic (E-CAFL) for WSN", *Scalable Computing: Practices and Experiences*, 20(1), pp.41-54, **2019**, (Scopus Indexed), <https://doi.org/10.12694/scpe.v20i1.1443>.
- [4] **Mehra, P.S.**, Doja, M.N., Alam, B.: "Stability Enhancement in LEACH (SE- LEACH) for WSN", *EAI Endorsed Transactions on Scalable Information Systems*, 19, pp. e5. **2019**, (Scopus Indexed), <https://doi.org/10.4108/eai.13-7-2018.156592>.
- [3] **Mehra, P.S.**, Doja, M.N., Alam, B.: "Codeword Authenticated Key Exchange (CAKE) secure routing protocol for WSN", *International Journal of Communication Systems*, 32(3), pp.e3879, Wiley **2018**, (SCIE Indexed, IF-2.1), <https://doi.org/10.1002/dac.3879>.
- [2] **Mehra, P.S.**, Doja, M.N., Alam, B.: "Zonal based approach in clustering in Heterogeneous WSN". *International Journal of Information Technology*, 11, pp.507-515, Springer **2017**, (Scopus Indexed), <https://doi.org/10.1007/s41870-017-0071-2>.
- [1] **Mehra, P.S.**, Agarwal, G.: "Practices of Teaching & Learning in ABESIT: A Case Presentation of Even Semester 2015-16 & Odd Semester 2016-17", *Journal of Engineering Education Transformation*, 30, pp.1-10 (**2017**, (Scopus Indexed), <https://doi.org/10.16920/jeet/2017/v0i0/111744>).

## Books

- \* Edited a book titled "**Industrial Internet of Things**" by CRC Press, 2023.
- \* Edited a book titled "**Healthcare Systems and Health Informatics: Using Internet of Things**" by CRC Press, 2022.
- \* Edited a book titled "**GATE 2013**" published by **GK Publishers** in 2013.

## BOOK CHAPTERS

- [5] Dwivedi, A.K., Sharma, A.K., Singh, S., **Mehra, P.S.** : "SCSZB: Sensor Congregate Stable Zonal-Based Routing Protocol Designed for Optimal WSN", In: *Advances in Smart Communication and Imaging Systems. Part of Lecture Notes in Electrical Engineering*, pp. 139-149 (2021). ISBN: 978-981-15-9938-5 (**Scopus Indexed**), [https://doi.org/10.1007/978-981-15-9938-5\\_15](https://doi.org/10.1007/978-981-15-9938-5_15).
- [4] **Mehra, P.S.**, Doja, M.N., Alam, B.: "Stable Period Enhancement for Zonal (SPEZ)-Based Clustering in Heterogeneous WSN". *Part of Smart Innovation System Technologies Book Series, (Scopus Indexed)*, Springer, vol. 79, pp.887-896 (2018), ISBN: 978-981-10-5828-8, [https://doi.org/10.1007/978-981-10-5828-8\\_83](https://doi.org/10.1007/978-981-10-5828-8_83).
- [3] **Mehra, P.S.**, Doja, M.N., Alam, B.: "Stable Period Extension for Heterogeneous Model In Wireless Sensor Network", In: *Next Generation Networks. Part of Advances in Intelligent Systems and Computing (AISC) book series, (Scopus Indexed)*, Springer, vol.638, pp. 579-587 (2018), ISBN: 978-981-10-6005-2-48, [https://doi.org/10.1007/978-981-10-6005-2\\_48](https://doi.org/10.1007/978-981-10-6005-2_48).
- [2] **Mehra, P.S.**, Doja M.N., Alam B.: "Enhanced Stable Period for Two Level and Multilevel Heterogeneous Model for Distant Base Station in Wireless Sensor Network", *Part of the Advances in Intelligent Systems and Computing (AISC) book series, (Scopus Indexed)*, Springer, vol.379, pp 751-759 (2015), ISBN: 978-81-322-2517-1-72, [https://doi.org/10.1007/978-81-322-2517-1\\_72](https://doi.org/10.1007/978-81-322-2517-1_72).
- [1] Dagur A., **Mehra, P.S.**, Gupta G., Sharma M.: "Enhanced Block Playfair Cipher", *Part of the Lecture Notes of the Institute for Computer Sciences, Social Informatics and Telecommunications Engineering book series, (Scopus Indexed)*, Springer, vol.115, pp 689-695, (2013), ISBN: 978-3-642-37949-9, [https://doi.org/10.1007/978-3-642-37949-9\\_60](https://doi.org/10.1007/978-3-642-37949-9_60).

## INTERNATIONAL CONFERENCES

- [5] Manju, Singh, S., Dwivedi, A.K., Sharma, A.K., **Mehra, P.S.**: "Learning Automata Based Heuristics for Target Q-Coverage", In: *Proceedings of 8th IEEE International Conference Reliability, Infocom Technologies and Optimization (ICRITO)*, pp. 170-173, (2020), ISBN: 978-1-7281-7016-9 (**Scopus Indexed**), <https://doi.org/10.1109/ICRITO48877.2020.9197923>.
- [4] Chanana, R., Singh, A.K., Killa, R., Agarwal, S., **Mehra, P.S.**: "Blockchain Based Secure Model for Sensor Data in Wireless Sensor Network", In: *Proceedings of 6th IEEE International Conference Signal Processing and Communication (ICSC)*, pp. 288-293, (2020), ISBN: 978-1-7281-5493-0 (**Scopus Indexed**), <https://doi.org/10.1109/ICSC48311.2020.9182776>.
- [3] Gupta, P., Raj, P., Tiwari, S., Kumari, P., **Mehra, P.S.**: "Energy Efficient Diagonal Based Clustering Protocol in Wireless Sensor Network", In: *Proceedings of International Conference Innovative Computing & Communications (ICICC)*, pp. 1-8, (2020), <http://dx.doi.org/10.2139/ssrn.3565781>.
- [2] **Mehra, P.S.**, Doja M.N., Alam B.: "Low energy adaptive stable energy efficient (LEASE) protocol for wireless sensor network", In: *Proceedings of IEEE International Conference on Futuristic Trends on Computational Analysis and Knowledge Management (ABLAZE)*, pp. 484-488 (2015). ISBN: 978-1-4799-8433-6. (**Scopus Indexed**), <https://doi.org/10.1109/ABLAZE.2015.7155044>.
- [1] Panwar M., **Mehra, P.S.**: "Hand gesture recognition for human computer interaction", In: *Proceedings of IEEE International Conference on Image Information Processing (ICIIP)*, pp. 1-7 (2011). ISBN: 978-1-61284-861-7 (**Scopus Indexed**), <https://doi.org/10.1109/ICIIP.2011.6108940>.

## NATIONAL CONFERENCES

- [2] **Mehra, P.S.**, Dagur A., Jamshed A., Gupta G.: "Overview of routing techniques in Wireless Sensor Network", In: *Proceedings of National Conference on Emerging Trends in Intelligent Computing & Communication (EICCC)*, pp.22-26 (2012).

- [1] **Mehra, P.S.**, Kumar B.: "Cluster Based Energy Efficient Protocol for Wireless Sensor Network", In: Proceedings of National Conference on Emerging Trends in IT and Computing Technology (NCETICT), pp.90-93 (2011).

## Professional Society Membership

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- \* Senior Member, IEEE (Member ID: 92457776).
- \* ACM (Member ID: 0443941).
- \* CSI (Life Member ID: 1052220006).
- \* ISTE (Life Member ID: LM-135437).
- \* IAENG (Member ID: 268325).
- \* UACEE (Member ID: SNM10100059874).

## Research Guidance

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### Doctoral Theses Guided

- Four (Undergoing).

### Masters Theses Guided

- 2019
  - Estimation of Household Energy Conservation using Machine Learning.
  - Blockchain Based Secure Model for Sensor Data in Wireless Sensor Network.
- 2021
  - Study of Machine and Deep Learning Algorithms for intrusion detection in IOT.
- 2022
  - Two (Undergoing.)
- 2023
  - Two (Undergoing.)

## Awards and Honors

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### Awards

- 2022
  - Research Excellence Award.
- 2023
  - Research Excellence Award.