

## BLOCKCHAIN SOLUTIONS FOR BIG DATA AND IOT CHALLENGES

**Dr. Shambhu Bhardwaj\***

\*Teerthanker Mahaveer University, Moradabad, Uttar Pradesh, INDIA

Email id: shambhu.bhardwaj@gmail.com

**DOI: 10.5958/2249-7137.2021.02560.X**

---

### ABSTRACT

*The widespread use of Blockchain technology, as well as the breadth of its applications, has prompted extensive study in a variety of practical and scientific fields. Although still in its early stages of development, the Blockchain is being hailed as a game-changing solution for contemporary technological issues such as decentralization, trust, identification, data ownership, and data-driven choices. Simultaneously, the world is seeing an increase in the amount and variety of digital data produced by both humans and robots. While trying to figure out the best method to store, organize, and analyze large amounts of data, Blockchain technology comes in handy. Its suggested solutions for decentralized private data management, digital property resolution, IoT connectivity, and public sector reforms are all having a big influence on how Big Data will develop. The innovative solutions related with some of the Big Data domains that may be aided by Blockchain technology are presented in this article.*

**KEYWORDS:** *Big Data, Blockchain, Digital Property, Internet of Things, Privacy, Smart Contracts.*

---

### REFERENCES

1. Jain N, Awasthi Y. WSN-AI based Cloud computing architectures for energy efficient climate smart agriculture with big data analysis. Int J Adv Trends Comput Sci Eng. 2019;
  2. Mathur G, Ghai W, Singh RK. A totalitarian technique for wormhole detection using big data analytics in iot network. Int J Sci Technol Res. 2020;
  3. Gupta D, Rana A, Tyagi S. A novel representative dataset generation approach for big data using hybrid Cuckoo search. Int J Adv Soft Comput its Appl. 2018;
  4. Agarwal N, Rana A, Pandey JP. Proxy signatures for secured data sharing. In: Proceedings of the 2016 6th International Conference - Cloud System and Big Data Engineering, Confluence 2016. 2016.
  5. Al-Bahri B, Noronha H, Pandey J, Singh AV, Rana A. Evaluate the Role of Big Data in Enhancing Strategic Decision Making for E-governance in E-Oman Portal. In: ICRITO 2020 - IEEE 8th International Conference on Reliability, Infocom Technologies and Optimization (Trends and Future Directions). 2020.
  6. Gupta P, Tyagi N. An approach towards big data - A review. In: International Conference on Computing, Communication and Automation, ICCCA 2015. 2015.
  7. Srivastava R, Sharma PK, Das KJM, Manjhi J. A hybrid approach for head and neck cancer
-

- using online image guidance and offline adaptive radiotherapy planning. *J Radiother Pract.* 2019;
8. Hammer S. *The Blockchain Ecosystem.* SSRN Electron J. 2018;
  9. Goyal AK, Singh R, Chauhan G, Rath G. Non-invasive systemic drug delivery through mucosal routes. *Artificial Cells, Nanomedicine and Biotechnology.* 2018.
  10. Niladry G, Ranjit S. Biogenic synthesis of bimetallic nanoparticles using cassia tora leaf extract. *Res J Biotechnol.* 2020;
  11. Goswami L, Kaushik MK, Sikka R, Anand V, Prasad Sharma K, Singh Solanki M. IOT Based Fault Detection of Underground Cables through Node MCU Module. In: *2020 International Conference on Computer Science, Engineering and Applications, ICCSEA 2020.* 2020.
  12. Brody P, Pureswaran V. Device democracy: Saving the future of the Internet of Things IBM. *IBM Glob Bus Serv Exec Rep.* 2015;
  13. Rabah K, Research M, Nairobi K. Convergence of AI, IoT, Big Data and Blockchain: A Review. *Lake Inst J.* 2018;
  14. Yue L, Junqin H, Shengzhi Q, Ruijin W. Big Data Model of Security Sharing Based on Blockchain. In: *Proceedings - 2017 3rd International Conference on Big Data Computing and Communications, BigCom 2017.* 2017.
  15. Sun H, Hua S, Zhou E, Pi B, Sun J, Yamashita K. Using ethereum blockchain in Internet of Things: A solution for electric vehicle battery refueling. In: *Lecture Notes in Computer Science (including subseries Lecture Notes in Artificial Intelligence and Lecture Notes in Bioinformatics).* 2018.
  16. Rainie L, Duggin M. *Privacy and Information Sharing.* Pew Res Cent Internet Proj. 2016;
  17. Zyskind G, Nathan O, Pentland AS. Decentralizing privacy: Using blockchain to protect personal data. In: *Proceedings - 2015 IEEE Security and Privacy Workshops, SPW 2015.* 2015.
  18. Fernandes E, Rahmati A, Jung J, Prakash A. Decentralized Action Integrity for Trigger-Action IoT Platforms. In 2018.
  19. McConaghy T, Holtzman D. *Towards An Ownership Layer for the Internet.* Ascribe. 2015.
  20. Goswami G, Goswami PK. Artificial Intelligence based PV-Fed Shunt Active Power Filter for IOT Applications. In: *Proceedings of the 2020 9th International Conference on System Modeling and Advancement in Research Trends, SMART 2020.* 2020.
  21. Rosenzweig R. *The Road to Xanadu: Public and Private Pathways on the History Web.* *J Am Hist.* 2001;