





















## References

- [1] Corici AA. Access control for M2M infrastructures in 5G networks.
- [2] Buscheck TA, Upadhye R. Earth Battery: Storing Energy with Compressed Air and Heated Brine in Porous Rock (Final Technical Report). Lawrence Livermore National Lab.(LLNL), Livermore, CA (United States); 2019 Mar 26.
- [3] Dutta UK, Razzaque MA, Al-Wadud MA, Islam MS, Hossain MS, Gupta BB. Self-adaptive scheduling of base transceiver stations in green 5g networks. *IEEE Access*. 2018 Jan 30;6:7958-69.
- [4] Wibowo WW, Astuti YD, Hudaya C. Solar-powered base transceiver station. In 2018 2nd International Conference on Green Energy and Applications (ICGEA) 2018 Mar 24 (pp. 108-112). *IEEE*.
- [5] Ziafat H, Shakeri M. Using data mining techniques in customer segmentation. *Journal of Engineering Research and Applications*. 2014;4(9):70-9.
- [6] Dhungana D, Grünbacher P, Rabiser R. The DOPLER meta-tool for decision-oriented variability modeling: a multiple case study. *Automated Software Engineering*. 2011 Mar;18(1):77-114.
- [7] Hemp A. 12 Altitudinal zonation and diversity patterns in the forests of Mount Kilimanjaro, Tanzania. *Tropical montane cloud forests: science for conservation and management*. 2011 Jan 6:134.
- [8] Arbin N, Suhaimi NS, Mokhtar NZ, Othman Z. Comparative analysis between k-means and k-medoids for statistical clustering. In 2015 3rd International Conference on Artificial Intelligence, Modelling and Simulation (AIMS) 2015 Dec 2 (pp. 117-121).
- [9] Khera R. India's public distribution system: utilisation and impact. *Journal of Development Studies*. 2011 Jul 1;47(7):1038-60.
- [10] Chakraborty S, Sarmah SP. Managing supply and transportation disruptions: A case of Indian fair price shops. *Kybernetes*. 2020 Jan 17.
- [11] Ji W, Chen C, Zhao B. A comparative study of the effects of ventilation-purification strategies on air quality and energy consumption in Beijing, China. In *Building simulation 2021 Jun* (Vol. 14, No. 3, pp. 813-825). Tsinghua University Press.
- [12] Ruan D, Huang J. A PSO-based uneven dynamic clustering multi-hop routing protocol for wireless sensor networks. *Sensors*. 2019 Jan;19(8):1835.
- [13] János S, Matijevics I. Simulation and implementation of mobile measuring robot navigation algorithms in controlled microclimatic environment using WSN. In 2011 IEEE 9th International Symposium on Intelligent Systems and Informatics 2011 Sep 8 (pp. 275-279). *IEEE*
- [14] Fadel E, Gungor VC, Nassef L, Akkari N, Malik MA, Almasri S, Akyildiz IF. A survey on wireless sensor networks for smart grid. *Computer Communications*. 2015 Nov 1;71:22-33.
- [15] Shankar Kartik, J., Ram Kumar, K. and Srimadhavan, V.S. (2013): Security System with Face Recognition, SMS Alert and Embedded Network Video Monitoring Terminal, *International Journal of Security, Privacy and Trust Management*, Vol. 2, No. 5, pp. 09-19.
- [16] Muruganandham, S.K., Sobyra, D., Nallusamy, S., Dulal Krishna Mandal and Partha Sarathi Chakraborty. (2018): Study on Leaf Segmentation Using K-Means and K-Medoid Clustering Algorithm for Identification of Disease, *Indian Journal of Public Health Research and Development*, Vol. 9, No. 5, pp. 291-295.
- [17] Shweta, R. and Dinesh Rotake. (2014): Design and Implementation of EDF Algorithm with Hardware Core Processor, *International Journal of Advance Research in Computer Science and Management Studies*, Vol. 2, No. 1, pp. 269-275.
- [18] Wei Jiang, Thomas Kaiser and Han Vinck. A.J. (2016): A Robust Opportunistic Relaying Strategy for Co-Operative Wireless Communications, *IEEE Transactions on Wireless Communications*, Vol. 15, No. 4, pp. 2642-2655.
- [19] sun, Z., Wang, P., Vuran, M.C., Al-Rodhaan, M.A., Al-Dhelaan, A.M. and Akyildiz, I.F. (2011): Border Sense: Border Patrol through Advanced Wireless Sensor Networks, *Ad Hoc Networks*, Vol. 9, No. 3, pp. 468-477.
- [20] Bharat Kulkarni. (2012): GSM based Automatic Meter Reading System using ARM Controller, *International Journal of Emerging Technology and Advanced Engineering*, Vol. 2, No. 5, pp. 446-448.
- [21] D. Kumar, T. C. Aseri, and R. B. Patel, "EEHC: energy efficient heterogeneous clustered scheme for wireless sensor networks," *Computer Communications*, vol. 32, no. 4, pp. 662-667, 2009.
- [22] Rashedi E, Nezamabadi-Pour H, Saryazdi S. GSA: a gravitational search algorithm. *Information sciences*. 2009 Jun 13;179(13):2232-48.
- [23] Shukla A, Singh SN. Multi-objective unit commitment with renewable energy using GSA algorithm. *INAE Letters*. 2016 Jun;1(1):21-7.

## Authors Profile



Mr. P. Rajakumar, is a Ph.D. Research scholar of Shri Venkateshwara University, Rajapur Gajraula, Uttar Pradesh, India. He completed an M.E in Computer Science and Engineering from Anna University, Tiruchirappalli, Tamilnadu in 2010. His research interests are Wireless Sensor Network and the Security of information transferred through the communication medium. Also, He is interested in programming languages such as Java, C#, python, and frameworks like MATLAB and .net programming.



Dr. M. Thirunavukkarasan received his Ph.D., a degree in Computer Science and Engineering from Manonmaniam Sundaranar University Tirunelveli, Tamil Nadu, India, in 2019. He received his M.E. in Computer Science and Engineering from Anna University Tiruchirappalli, Tamil Nadu, India, in 2010. He has more than 13 years of Research and Teaching Experience in the domain of Computer Science and Engineering. He is currently supervising three M.Tech students and guiding two Ph.D. students. His research interest includes the Internet of Things (IoT), Wireless Sensor Networks, Wireless Communication, Cloud Computing, and AI&ML. He has published papers in several international conferences and journals. He has given keynote addresses at many international conferences. He has been involved in several professional activities and as a member of professional committees like IEEE, ACM and CSI.