

- Journal of ICT In Education, vol. 6, pp. 46–57, Jun. 2019, doi:10.37134/jictic.vol6.5.2019.
- [3] K. A. Hossain, "Analysis of present and future use of artificial intelligence (AI) in line of fourth industrial revolution (4IR)", *Sci. Res. J.*, vol. 11, no. 8, pp. 1-50, Aug. 2023.
 - [4] A. H. Alamoody et al., "Machine learning-based imputation soft computing approach for large missing scale and non-reference data imputation," *Chaos, Solitons & Fractals*, vol. 151, p. 111236, Oct. 2021, doi: 10.1016/j.chaos.2021.111236.
 - [5] M. A. Chyad, H. A. Alstatar, B. B. Zaidan, A. A. Zaidan, and G. A. Al Shafeey, "The Landscape of Research on Skin Detectors: Coherent Taxonomy, Open Challenges, Motivations, Recommendations and Statistical Analysis, Future Directions," *IEEE Access*, vol. 7, pp. 106536–106575, 2019, doi: 10.1109/access.2019.2924989.
 - [6] O. S. Albahri et al., "Helping doctors hasten COVID-19 treatment: Towards a rescue framework for the transfusion of best convalescent plasma to the most critical patients based on biological requirements via ml and novel MCDM methods," *Computer Methods and Programs in Biomedicine*, vol. 196, p. 105617, Nov. 2020, doi:10.1016/j.cmpb.2020.105617.
 - [7] K. O. Lewis, V. Popov, and S. S. Fatima, "From static web to metaverse: reinventing medical education in the post-pandemic era," *Annals of Medicine*, vol. 56, no. 1, Jan. 2024, doi:10.1080/07853890.2024.2305694.
 - [8] O. S. Albahri et al., "Fault-Tolerant mHealth Framework in the Context of IoT-Based Real-Time Wearable Health Data Sensors," *IEEE Access*, vol. 7, pp. 50052–50080, 2019, doi:10.1109/access.2019.2910411.
 - [9] A. Giampieri, J. Ling-Chin, Z. Ma, A. Smallbone, and A. P. Roskilly, "A review of the current automotive manufacturing practice from an energy perspective," *Applied Energy*, vol. 261, p. 114074, Mar. 2020, doi: 10.1016/j.apenergy.2019.114074.
 - [10] C. Llopis-Albert, F. Rubio, and F. Valero, "Impact of digital transformation on the automotive industry," *Technological Forecasting and Social Change*, vol. 162, p. 120343, Jan. 2021, doi:10.1016/j.techfore.2020.120343.
 - [11] M. C. Zizic, M. Mladineo, N. Gjeldum, and L. Celent, "From Industry 4.0 towards Industry 5.0: A Review and Analysis of Paradigm Shift for the People, Organization and Technology," *Energies*, vol. 15, no. 14, p. 5221, Jul. 2022, doi: 10.3390/en15145221.
 - [12] E. Rauch, C. Linder, and P. Dallasega, "Anthropocentric perspective of production before and within Industry 4.0," *Computers & Industrial Engineering*, vol. 139, p. 105644, Jan. 2020, doi:10.1016/j.cie.2019.01.018.
 - [13] P. Wang et al., "AR/MR Remote Collaboration on Physical Tasks: A Review," *Robotics and Computer-Integrated Manufacturing*, vol. 72, p. 102071, Dec. 2021, doi: 10.1016/j.rcim.2020.102071.
 - [14] J. Leng et al., "Towards resilience in Industry 5.0: A decentralized autonomous manufacturing paradigm," *Journal of Manufacturing Systems*, vol. 71, pp. 95–114, Dec. 2023, doi:10.1016/j.jmsy.2023.08.023.
 - [15] M. Irgan and S. Shaddiq, "Industry 4.0 and Industry 5.0—Inception, Conception, Perception, and Rethinking Loyalty Employment," *International Journal of Economics, Management, Business, and Social Science (IJEMBS)*, vol. 4, no. 1, pp. 95-114, 2024.
 - [16] R. Tallat et al., "Navigating Industry 5.0: A Survey of Key Enabling Technologies, Trends, Challenges, and Opportunities," *IEEE Communications Surveys & Tutorials*, vol. 26, no. 2, pp. 1080–1126, 2024, doi: 10.1109/comst.2023.3329472.
 - [17] D. B. Rawat and D. H. Hagos, "Metaverse Survey & Tutorial: Exploring Key Requirements, Technologies, Standards, Applications, Challenges, and Perspectives," *arXiv preprint arXiv:2405.04718*, 2024. doi: 10.48550/arXiv.2405.04718.
 - [18] N. J. Khalaf, S. Ben Amor, B. Louhichi, J. S. Chiad, and A. Seibi, "Experimental Investigation to Optimize the Manufacturing Parameters of Ankle–Foot Orthoses Using Composite and Titanium Nanoparticles," *Journal of Composites Science*, vol. 8, no. 2, p. 45, Jan. 2024, doi: 10.3390/jcs8020045.
 - [19] Y. P. Tsang, T. Yang, Z. S. Chen, C. H. Wu, and K. H. Tan, "How is extended reality bridging human and cyber-physical systems in the IoT-empowered logistics and supply chain management?," *Internet of Things*, vol. 20, p. 100623, Nov. 2022, doi: 10.1016/j.iot.2022.100623.
 - [20] R. F. Ghazi, J. S. Chiad, and F. M. Abdulghani, "Design and manufacturing a smart shoe for diabetic foot ulcer monitoring and prediction system using internet-of-things technology," *Journal of the Brazilian Society of Mechanical Sciences and Engineering*, vol. 46, no. 2, Jan. 2024, doi: 10.1007/s40430-023-04591-2.
 - [21] E. G. Carayannis, R. Canestrino, and P. Magliocca, "From the Dark Side of Industry 4.0 to Society 5.0: Looking 'Beyond the Box' to Developing Human-Centric Innovation Ecosystems," *IEEE Transactions on Engineering Management*, vol. 71, pp. 6695–6711, 2024, doi: 10.1109/tem.2023.3239552.
 - [22] T. Sharifi, Y. Ghayeb, T. Mohammadi, M. M. Momeni, R. Bagheri, and Z. Song, "Surface treatment of titanium by in-situ anodization and NiO photodeposition: enhancement of photoelectrochemical properties for water splitting and photocathodic protection of stainless steel," *Applied Physics A*, vol. 127, no. 1, Jan. 2021, doi:10.1007/s00339-020-03901-y.
 - [23] J. Basulo-Ribeiro and L. Teixeira, "The Future of Healthcare with Industry 5.0: Preliminary Interview-Based Qualitative Analysis," *Future Internet*, vol. 16, no. 3, p. 68, Feb. 2024, doi:10.3390/fi16030068.
 - [24] M. Govindaraj, C. Gnanasekaran, R. Kandavel, P. Khan, and S. D. Hoang, "Revolutionizing Service Productivity," *Innovative Technologies for Increasing Service Productivity*, pp. 41–60, Mar. 2024, doi: 10.4018/979-8-3693-2019-8.ch003.
 - [25] M. M. Abdulmunaam and O. S. Farhan, "Finite Element Analysis of Reinforced Self Consolidation Concrete Beams Having a Horizontal Construction Joint," *Al-Nahrain Journal for Engineering Sciences*, vol. 27, no. 2, pp. 141–148, Aug. 2024, doi: 10.29194/njes.27020141.
 - [26] S. Grabowska, S. Saniuk, and B. Gajdzik, "Industry 5.0: improving humanization and sustainability of Industry 4.0," *Scientometrics*, vol. 127, no. 6, pp. 3117–3144, Apr. 2022, doi: 10.1007/s11192-022-04370-1.
 - [27] R. Thapa, S. Poudel, K. Krukiewicz, and A. Kunwar, "A topical review on AI-interlinked biodomain sensors for multi-purpose applications," *Measurement*, vol. 227, p. 114123, Mar. 2024, doi:10.1016/j.measurement.2024.114123.
 - [28] J. M. Górriz et al., "Artificial intelligence within the interplay between natural and artificial computation: Advances in data science, trends and applications," *Neurocomputing*, vol. 410, pp. 237–270, Oct. 2020, doi: 10.1016/j.neucom.2020.05.078.
 - [29] N. A. Sadek, Z. T. Al-Dahan, and S. A. Rattan, "Comprehensive Survey of the State-of-the-Art Deep Learning Models for Diabetic Retinopathy Detection and Grading Using Retinal Fundus Photography," *Al-Nahrain Journal for Engineering Sciences*, vol. 27, no. 2, pp. 155–163, Jun. 2024, doi: 10.29194/njes.27020155.
 - [30] N. Baer and A. Oever, *Technics*. Amsterdam University Press, 2024. doi: 10.5117/9789048564552.
 - [31] L. Montag, "Circular Economy and Supply Chains: Definitions, Conceptualizations, and Research Agenda of the Circular Supply Chain Framework," *Circular Economy and Sustainability*, vol. 3, no. 1, pp. 35–75, May 2022, doi: 10.1007/s43615-022-00172-y.
 - [32] G. da M. Passos Neto, L. H. Alencar, and R. Valdes-Vasquez, "Multiple-Criteria Methods for Assessing Social Sustainability in the Built Environment: A Systematic Review," *Sustainability*, vol. 15, no. 23, p. 16231, Nov. 2023, doi: 10.3390/su152316231.
 - [33] S. E. Bibri, "The Metaverse as a Virtual Model of Platform Urbanism: Its Converging AIoT, XReality, Neurotech, and Nanobiotech and Their Applications, Challenges, and Risks," *Smart Cities*, vol. 6, no. 3, pp. 1345–1384, May 2023, doi: 10.3390/smartcities6030065.
 - [34] Y. K. Dwivedi et al., "Metaverse beyond the hype: Multidisciplinary perspectives on emerging challenges, opportunities, and agenda for research, practice and policy," *International Journal of Information Management*, vol. 66, p. 102542, Oct. 2022, doi:10.1016/j.ijinfomgt.2022.102542.
 - [35] A. I. S. Kubba and A. A. Alammari, "Manufacturing and Testing Pneumatic Pads Adjustable Socket for A Below-Knee Prosthetic," *Al-Nahrain Journal for Engineering Sciences*, vol. 27, no. 2, pp. 164–168, Aug. 2024, doi: 10.29194/njes.27020164.
 - [36] S. K. Jagatheesaperumal and M. Rahouti, "Building Digital Twins of Cyber Physical Systems With Metaverse for Industry 5.0 and Beyond," *IT Professional*, vol. 24, no. 6, pp. 34–40, Nov. 2022, doi:10.1109/mitp.2022.3225064.
 - [37] X. Yao, N. Ma, J. Zhang, K. Wang, E. Yang, and M. Faccio, "Enhancing wisdom manufacturing as industrial metaverse for industry and society 5.0," *Journal of Intelligent Manufacturing*, vol. 35, no. 1, pp. 235–255, Nov. 2022, doi: 10.1007/s10845-022-02027-7.
 - [38] P. A. Rauschnabel, R. Felix, C. Hinsch, H. Shahab, and F. Alt, "What is XR? Towards a Framework for Augmented and Virtual Reality," *Computers in Human Behavior*, vol. 133, p. 107289, Aug. 2022, doi:10.1016/j.chb.2022.107289.
 - [39] M. Tukur et al., "The Metaverse digital environments: A scoping review of the techniques, technologies, and applications," *Journal of*

- King Saud University - Computer and Information Sciences, vol. 36, no. 2, p. 101967, Feb. 2024, doi: 10.1016/j.jksuci.2024.101967.
- [40] P. A. Rauschnabel, B. J. Babin, M. C. tom Dieck, N. Krey, and T. Jung, "What is augmented reality marketing? Its definition, complexity, and future," *Journal of Business Research*, vol. 142, pp. 1140–1150, Mar. 2022, doi: 10.1016/j.jbusres.2021.12.084.
- [41] Y. Ren, Z. Lv, N. N. Xiong, and J. Wang, "HCNCT: A Cross-chain Interaction Scheme for the Blockchain-based Metaverse," *ACM Transactions on Multimedia Computing, Communications, and Applications*, vol. 20, no. 7, pp. 1–23, Mar. 2024, doi:10.1145/3594542.
- [42] H. Xie, J. Xu, and Y.-F. Liu, "Max-Min Fairness in IRS-Aided Multi-Cell MISO Systems With Joint Transmit and Reflective Beamforming," *IEEE Transactions on Wireless Communications*, vol. 20, no. 2, pp. 1379–1393, Feb. 2021, doi: 10.1109/twc.2020.3033332.
- [43] Z. Ma, Y. Wu, M. Xiao, G. Liu, and Z. Zhang, "Interference Suppression for Railway Wireless Communication Systems: A Reconfigurable Intelligent Surface Approach," *IEEE Transactions on Vehicular Technology*, vol. 70, no. 11, pp. 11593–11603, Nov. 2021, doi: 10.1109/tvt.2021.3111646.
- [44] J. J. K. Chai, C. O'Sullivan, A. A. Gowen, B. Rooney, and J.-L. Xu, "Augmented/mixed reality technologies for food: A review," *Trends in Food Science & Technology*, vol. 124, pp. 182–194, Jun. 2022, doi: 10.1016/j.tifs.2022.04.021.
- [45] N. Yuviler-Gavish, E. Horesh, E. Shamilov, H. Krisher, and L. Admoni, "The effect of augmented virtuality on financial decision-making among adults and children," *Virtual Reality*, vol. 26, no. 3, pp. 1001–1008, Jan. 2022, doi: 10.1007/s10055-021-00610-6.
- [46] R. Johnstone, N. McDonnell, and J. R. Williamson, "When Virtuality Surpasses Reality: Possible Futures of Ubiquitous XR," *CHI Conference on Human Factors in Computing Systems Extended Abstracts*, pp. 1–8, Apr. 2022, doi: 10.1145/3491101.3516396.
- [47] K. Anitha, I. Ghosal, and A. Khunteta, "Digital Twins AR and VR," *Emerging Technologies in Digital Manufacturing and Smart Factories*, pp. 193–204, Feb. 2024, doi: 10.4018/979-8-3693-0920-9.ch011.
- [48] L. Bojic, "Metaverse through the prism of power and addiction: what will happen when the virtual world becomes more attractive than reality?," *European Journal of Futures Research*, vol. 10, no. 1, Oct. 2022, doi: 10.1186/s40309-022-00208-4.
- [49] R. L. Hornsey and P. B. Hibbard, "Current Perceptions of Virtual Reality Technology," *Applied Sciences*, vol. 14, no. 10, p. 4222, May 2024, doi: 10.3390/app14104222.
- [50] G.-D. Voinea, F. Gîrbacia, M. Duguleană, R. G. Boboc, and C. Gheorghe, "Mapping the Emergent Trends in Industrial Augmented Reality," *Electronics*, vol. 12, no. 7, p. 1719, Apr. 2023, doi:10.3390/electronics12071719.
- [51] C. Cacciuttolo, V. Guzmán, P. Catriñir, and E. Atencio, "Sensor Technologies for Safety Monitoring in Mine Tailings Storage Facilities: Solutions in the Industry 4.0 Era," *Minerals*, vol. 14, no. 5, p. 446, Apr. 2024, doi: 10.3390/min14050446.
- [52] A. Brunzini, M. Ciccarelli, M. Sartini, A. Papetti, and M. Germani, "A comparative study for the assessment of marker-less mixed reality applications for the operator training," *International Journal of Computer Integrated Manufacturing*, pp. 1–23, Feb. 2024, doi:10.1080/0951192x.2024.2314793.
- [53] A. Assila, A. Dhoub, Z. Monla, and M. Zghal, "Integration of Augmented, Virtual and Mixed Reality with Building Information Modeling: A Systematic Review," *Virtual, Augmented and Mixed Reality: Design and Development*, pp. 3–19, 2022, doi: 10.1007/978-3-031-05939-1_1.
- [54] R. Ali, R. Liu, Y. He, A. Nayyar, and B. Qureshi, "Systematic Review of Dynamic Multi-Object Identification and Localization: Techniques and Technologies," *IEEE Access*, vol. 9, pp. 122924–122950, 2021, doi: 10.1109/access.2021.3108775.
- [55] M. Hartmann, U. S. Hashmi, and A. Imran, "Edge computing in smart health care systems: Review, challenges, and research directions," *Transactions on Emerging Telecommunications Technologies*, vol. 33, no. 3, Aug. 2019, doi: 10.1002/ett.3710.
- [56] K. Rajkumar and U. Hariharan, "Moving to the cloud, fog, and edge computing paradigms: Convergences and future research direction," *Artificial Intelligence and Machine Learning for EDGE Computing*, pp. 425–442, 2022, doi: 10.1016/b978-0-12-824054-0.00018-6.
- [57] H. Wang et al., "Architectural Design Alternatives Based on Cloud/Edge/Fog Computing for Connected Vehicles," *IEEE Communications Surveys & Tutorials*, vol. 22, no. 4, pp. 2349–2377, 2020, doi: 10.1109/comst.2020.3020854.
- [58] A. Hazarika and M. Rahmati, "Towards an Evolved Immersive Experience: Exploring 5G- and Beyond-Enabled Ultra-Low-Latency Communications for Augmented and Virtual Reality," *Sensors*, vol. 23, no. 7, p. 3682, Apr. 2023, doi: 10.3390/s23073682.
- [59] Y. Cao, J. Cao, D. Bai, Z. Hu, K. Wang, and M. Zhang, "PolyVerse: An Edge Computing-Empowered Metaverse with Physical-to-Virtual Projection," *2023 International Conference on Intelligent Metaverse Technologies & Applications (iMETA)*, pp. 1–8, Sep. 2023, doi:10.1109/imeta59369.2023.10294558.
- [60] M. B. Shahab, R. Abbas, M. Shirvanimoghaddam, and S. J. Johnson, "Grant-Free Non-Orthogonal Multiple Access for IoT: A Survey," *IEEE Communications Surveys & Tutorials*, vol. 22, no. 3, pp. 1805–1838, 2020, doi: 10.1109/comst.2020.2996032.
- [61] G. Nain, K. K. Pattanaik, and G. K. Sharma, "Towards edge computing in intelligent manufacturing: Past, present and future," *Journal of Manufacturing Systems*, vol. 62, pp. 588–611, Jan. 2022, doi:10.1016/j.jmsy.2022.01.010.
- [62] P. M. Sánchez Sánchez, J. M. Jorquera Valero, A. Huertas Celdrán, G. Bovet, M. Gil Pérez, and G. M. Pérez, "A methodology to identify identical single-board computers based on hardware behavior fingerprinting," *Journal of Network and Computer Applications*, vol. 212, p. 103579, Mar. 2023, doi: 10.1016/j.jnca.2022.103579.
- [63] H. K. Sharaf, S. Alyousif, N. J. Khalaf, A. F. Hussein, and M. K. Abbas, "Development of bracket for cross arm structure in transmission tower: Experimental and numerical analysis," *New Materials, Compounds and Applications*, vol. 6, no. 3, pp. 257–275, 2022.
- [64] C. Mao and D. Chang, "Review of cross-device interaction for facilitating digital transformation in smart home context: A user-centric perspective," *Advanced Engineering Informatics*, vol. 57, p. 102087, Aug. 2023, doi: 10.1016/j.aei.2023.102087.
- [65] A. H. T. Al-Temimi, Y. J. Lafta, I. O. Bachi Al-Fahad, and H. K. Sharaf, "Study the Influence of Impact on the Filled Tube of Aluminum 6082-T6 Alloy by Consideration of Temperature using FEM," *Journal of Advanced Research in Fluid Mechanics and Thermal Sciences*, vol. 122, no. 2, pp. 118–129, Oct. 2024, doi:10.37934/arfm.122.2.118129.
- [66] S. A. Nawi, H. B. Mohammed, A. N. Jasim, H. K. Sharaf, and M. T. Muhammad, "Numerical Analysis of the Influence of the Rolling Speed on the Cold Rolling under Specific Thermal Condition of the AA 5052-O Aluminum Alloy," *Journal of Advanced Research in Fluid Mechanics and Thermal Sciences*, vol. 122, no. 1, pp. 69–79, Oct. 2024, doi: 10.37934/arfm.122.1.6979.
- [67] I. O. Bachi Al-Fahad and Hussein Kadhim Sharaf, "Investigation of the Effect of Heat Transfer during Friction Stir Welding (FSW) of AZ80A Mg Alloy Plates using a Pin Tool by Conducting Finite Elements Analysis," *Journal of Advanced Research in Fluid Mechanics and Thermal Sciences*, vol. 117, no. 1, pp. 98–108, May 2024, doi: 10.37934/arfm.117.1.98108.
- [68] B. A. Sadkhan, S. H. Omran, and H. K. Sharaf, "An Experimental Analysis on the Impact of the Epoxy on the Torsional Behavior of Composite Fiber-Glass," *Journal of Advanced Research in Applied Mechanics*, vol. 117, no. 1, pp. 150–160, Jun. 2024, doi:10.37934/aram.117.1.150160.
- [69] A. Fattahi, H. K. Sharaf, and N. Mariah, "Thermal Comfort Assessment of UPM Engineering Library in Tropical Climate Conditions," *Journal of Advanced Research in Applied Mechanics*, vol. 117, no. 1, pp. 179–189, Jun. 2024, doi:10.37934/aram.117.1.179189.
- [70] B. A. Sadkhan, E. J. Yousif, A. T. Shomran, E. K. Hussein, and H. K. Sharaf, "Investigation of the Impact Response of Plain Weave E-Glass Composite Structure Based on the EN ISO 178 Standard," *Journal of Advanced Research in Applied Mechanics*, vol. 117, no. 1, pp. 118–127, Jun. 2024, doi: 10.37934/aram.117.1.118127.
- [71] Y. M. Abdullah, G. S. Aziz, H. K. Salah, and H. K. Sharaf, "Simulate the Rheological Behaviour of the Solar Collector by Using Computational Fluid Dynamic Approach," *CFD Letters*, vol. 15, no. 9, pp. 175–182, Aug. 2023, doi: 10.37934/cfdl.15.9.175182.
- [72] A. H. A. Bari, R. A. Abed, R. M. Kahdim, H. F. Hasan, H. K. Sharaf, and A. S. Alwan, "The role of internal auditing in corruption control and enhancing corporate governance: A board of directors' outlook," *Corporate Board: Role, Duties and Composition*, vol. 20, no. 2, pp. 120–127, 2024, doi: 10.22495/cbv20i2art12.
- [73] F. T. Al-Maliky and J. S. Chiad, "Study and analysis the flexion moment in active and passive knee prosthesis using back propagation neural network predictive," *Journal of the Brazilian Society of*

- Mechanical Sciences and Engineering, vol. 44, no. 11, Oct. 2022, doi:10.1007/s40430-022-03850-y.
- [74] H. A. Saleh, A. R. Ali, A. N. S. Almshabbak, H. K. Sharaf, H. F. Hasan, and A. S. Alwan, "The impact of auditor-client range on audit quality and timely auditor report," *Corporate and Business Strategy Review*, vol. 5, no. 1, special Issue, pp. 329–335, 2024, doi:10.22495/cbsrv5i1siart7.
- [75] I. O. B. Al-Fahad, A. D. Hassan, B. M. Faisal, and H. kadhim Sharaf, "Identification of regularities in the behavior of a glass fiber-reinforced polyester composite of the impact test based on ASTM D256 standard," *Eastern-European Journal of Enterprise Technologies*, vol. 4, no. 7 (124), pp. 63–71, Aug. 2023, doi:10.15587/1729-4061.2023.286541.
- [76] I. O. B. Al-Fahad, H. kadhim Sharaf, L. N. Bachache, and N. K. Bachache, "Identifying the mechanism of the fatigue behavior of the composite shaft subjected to variable load," *Eastern-European Journal of Enterprise Technologies*, vol. 3, no. 7 (123), pp. 37–44, Jun. 2023, doi: 10.15587/1729-4061.2023.283078.
- [77] K. A. Subhi, E. K. Hussein, S. A. K. Al-Jumaili, and Z. A. Abbas, "Implementation of the numerical analysis of dynamic loads on the composite structure employing the FE method," *Eastern-European Journal of Enterprise Technologies*, vol. 1, no. 7(115), pp. 42–47, Feb. 2022, doi: 10.15587/1729-4061.2022.253545.
- [78] L. T. Mouhmmmd, M. A. Rahima, A. M. Mohammed, H. F. Hasan, A. S. Alwan, and H. K. Sharaf, "The effect of firm type on the relationship between accounting quality and trade credit in listed firms," *Corporate and Business Strategy Review*, vol. 4, no. 2, pp. 175–183, 2023, doi:10.22495/cbsrv4i2art16.
- [79] M. A. Burhanuddin, A. A.-J. Mohammed, R. Ismail, M. E. Hameed, A. N. Kareem, and H. Basiron, "A Review on Security Challenges and Features in Wireless Sensor Networks: IoT Perspective", *JTEC*, vol. 10, no. 1-7, pp. 17–21, Feb. 2018.
- [80] C. Zheyuan, A. T. Hammid, A. N. Kareem, M. Jiang, M. N. Mohammed, and N. M. Kumar, "A Rigid Cuckoo Search Algorithm for Solving Short-Term Hydrothermal Scheduling Problem," *Sustainability*, vol. 13, no. 8, p. 4277, Apr. 2021, doi:10.3390/su13084277.
- [81] F. M. Aswad, A. N. Kareem, A. M. Khudhur, B. A. Khalaf, and S. A. Mostafa, "Tree-based machine learning algorithms in the Internet of Things environment for multivariate flood status prediction," *Journal of Intelligent Systems*, vol. 31, no. 1, pp. 1–14, Nov. 2021, doi:10.1515/jisys-2021-0179.