Artificial Intelligence and Machine Learning for Industry 5.0

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Abstract*: In the context of Industry 5.0, the study investigates the transformational potential of machine learning (ML) and artificial intelligence (AI) approaches. It delves into various subfields of AI and ML, including classification, clustering, deep learning, and more, highlighting their applications and significance in driving innovation and efficiency in industrial processes. Through a systematic review of existing literature and case studies, the paper provides insights into how AI and ML technologies are reshaping Industry 5.0, enabling intelligent decision-making, adaptive control, real-time event detection, and enhancing human-machine collaboration. Additionally, the paper discusses challenges and future directions in leveraging AI and ML for Industry 5.0, offering recommendations for practitioners and researchers*

Keywords: Machine Learning, Artificial Intelligence, Industry 5.0, Augmented Intelligence

REFERENCES

[1]. K. Turowski Khan, IoTBD 2016 - Proceedings of the International Conference on Internet of Things and Big Data, 2016, pp. 441–448. A viewpoint on industry 4.0: From problems to potential in production systems. 10.5220/0005929704410448 is the doi.

[2]. V. Roblek, A. Krapež, M. Meško, A Nuanced Perspective on Industry 4.0, SAGE Open 3(2016). 10.1177/2158244016653987 is the doi.

[3]. Industry 4.0: A look at upcoming industry prospects and problems, K. Zhou, T. Liu, and L. Zhou, in: 2015 12th International Conference on Fuzzy Systems andKnowledge Discovery, FSKD 2015, 2016, pp. 2147–2152.10.1109/FSKD.2015.7382284, is the doi. In the Proceedings of the 2015 International Conference on Intelligent Computing and Internet of Things, ICIT 2015, IEEE 2015, pp. 135–140, J. Wan, H. Cai, and K. Zhou discuss Industrie 4.0: Enabling technologies.10.1109/ICAIOT.2015.7111555 is the doi.

[4]. Computers & Industrial Engineering 139 (2020) 106193. doi: 10.1016/j.cie.2019.106193. [4] T. Lins,. A. R. Oliveira, Cyber-physical production systems retrofitting in perspective of industry 4.0.

[5]. In: IEEE 2021 International Conference on Engineering, Technology, and Innovation, ICE/ITMC 2021, June 21–22, 2021, Cardi, United Kingdom, IEEE, 2021, pp. 1–8. Impact of industry 4.0 on quality management: identification of primary issues towards a quality 4.0 strategy, D. Corti, S. Masiero, and B. Gladysz. The doi is 10.1109/ICE/ITMC52061.2021.7877669.

[6]. Industry 4.0-driven development of optimization algorithms: A comprehensive perspective, Complexity 2021 (2021) 6621235, R. Csalódi, Z. Süle, S. Jaskó, T. Holczinger, J. Abonyi. doi: 10.1515/6621235; 2021.

[7]. Approaches of production planning and management under industry 4.0: A literature survey by J.-P. Herrmann, S. Tackenberg, E. Padoano, and T. Gamber, Journal of Industrial Engineering and Management 15 (2022) 4. doi: 10.3926/jiem.3582.

[8]. Journal of Intelligent Manufacturing 31 (2020) 1531–1558. doi: 10.1007/s10845-019-01531-7. J. P. U. Cadavid, S. Lamouri, B. Grabot, R. Pellerin, and A. Fortin. Machine learning used in production planning and control: a state-of-the-art in the era of industry 4.0.

[9]. LinkedIn , Ai application in industry 5.0 , https://www.linkedin.com/pulse/industry-50-perfect-storm-machine-learning-artificial-amr-helal/ , Industries 5.0 The future of Manufacturing. Published by Amr Helal 1 year ago.

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