REFERENCES

 M. De Ryck, M. Versteyhe, and F. Debrouwere, "Automated guided vehicle systems, state-of-the-art control algorithms and techniques," J. Manuf. Syst., vol. 54, pp. 152–173, 2020.

[2] K. Zhou, "Whether the AGV/AMR can be used in e-commerce," 2022.

[3] E. A. Oyekanlu et al., "A review of recent advances in automated guided vehicle technologies: Integration challenges and research areas for 5G-based smart manufacturing applications," IEEE Access, vol. 8, pp. 202312–202353, 2020.

[4] G. Fragapane, R. De Koster, F. Sgarbossa, and J. O. Strandhagen, "Planning and control of autonomous mobile robots for intralogistics: Literature review and research agenda," Eur. J. Oper. Res., vol. 294, no. 2, pp. 405–426, 2021.

[5] M. Vaccarino, "State of the art on multi-agent path finding," 2019.

[6] R. Stern et al., "Multi-agent pathfinding: Definitions, variants, and benchmarks," in Proc. Int. Symp. Combinatorial Search, vol. 10, no. 1, pp. 151–158, 2019.

[7] J. Li, A. Tinka, S. Kiesel, J. W. Durham, T. S. Kumar, and S. Koenig, "Lifelong multi-agent path finding in large-scale warehouses," in Proc. AAAI Conf. Artif. Intell., vol. 35, no. 13, pp. 11272–11281, May 2021.

[8] Z. Zhang, J. Chen, and Q. Guo, "Application of Automated Guided Vehicles in Smart Automated Warehouse Systems: A Survey," CMES-Comput. Model. Eng. Sci., vol. 134, no. 3, 2023.

[9] C. Feledy and M. Schiller Luttenberger, "A state of the art map of the AGVS technology and a guideline for how and where to use it," 2017.

[10] Hy-Tek, "What's the Difference Between AMR and AGV?" [Online]. Available: https://hy-tek.com/resources/whats-the-difference-between-amr-andagv/. Accessed: October 10, 2023. [11] Supply Chain Dive, "AMR vs. AGV: 7 Key Differences That Businesses Need to Know," [Online]. Available: https://www.supplychaindive.com/spons/amr-vs-agv-7-key-differences-thatbusinesses-need-to-know/634837/. Accessed: October 10, 2023.

[12] OTTO Motors, "AMR vs. AGV: A Comparison of Automated Material Transport," [Online]. Available: https://ottomotors.com/blog/amr-vs-agv-a-comparison-of-automated-material-transport. Accessed: October 10, 2023.

[13] A. Gellert, D. Sarbu, S. A. Precup, A. Matei, D. Circa, and C. B. Zamfirescu, "Estimation of missing LiDAR data for accurate AGV localization," IEEE Access, vol. 10, pp. 68416–68428, 2022.

[14] M. P. Li, "Task Assignment and Path Planning for Autonomous Mobile Robots in Stochastic Warehouse Systems," Rochester Institute of Technology, 2021.

[15] P. Kedia, "Using simulation in design of a cellular assembly plant with automatic guided vehicles," Institute of Electrical and Electronics Engineers (IEEE), 1990.

[16] Hy-Tek, "How to Calculate the ROI of Warehouse Robots," [Online]. Available: https://hy-tek.com/resources/how-to-calculate-the-roi-of-warehouse-robots/. Accessed: October 11, 2023.

[17] TestSigma, "ROI in Test Automation: The Ultimate Guide," [Online].Available: https://testsigma.com/blog/roi-test-automation/. Accessed: October 11, 2023.

[18] Mobile Industrial Robots, "MIR100 Boosts Productivity and Safety for Honeywell in the United Kingdom," [Online]. Available: https://www.mobileindustrial-robots.com/case-studies/mir100-honeywell-safety-productivitysolutions-united-kingdom/. Accessed: October 11, 2023.

[19] G. Sharon, R. Stern, A. Felner, and N. R. Sturtevant, "Conflict-based search for optimal multi-agent pathfinding," Artif. Intell., vol. 219, pp. 40–66, 2015.

[20] M. Barer, G. Sharon, R. Stern, and A. Felner, "Suboptimal variants of the conflict-based search algorithm for the multi-agent pathfinding problem," in Proc. Int. Symp. Combinatorial Search, vol. 5, no. 1, pp. 19–27, 2014.

[21] K. Arulkumaran, M. P. Deisenroth, M. Brundage, and A. A. Bharath, "Deep reinforcement learning: A brief survey," IEEE Signal Process. Mag., vol. 34, no. 6, pp. 26–38, 2017.

[22] K. Zhang, Z. Yang, and T. Başar, "Multi-agent reinforcement learning: A selective overview of theories and algorithms," in Handbook of Reinforcement Learning and Control, pp. 321–384, 2021.

[23] L. Canese, G. C. Cardarilli, L. Di Nunzio, R. Fazzolari, D. Giardino, M. Re, and S. Spanò, "Multi-agent reinforcement learning: A review of challenges and applications," Appl. Sci., vol. 11, no. 11, p. 4948, 2021.

[24] A. Oroojlooy and D. Hajinezhad, "A review of cooperative multi-agent deep reinforcement learning," Appl. Intell., vol. 53, no. 11, pp. 13677-13722, 2023.

[25] K. Zhang, Z. Yang, H. Liu, T. Zhang, and T. Basar, "Fully decentralized multi-agent reinforcement learning with networked agents," in Proc. Int. Conf. Mach. Learn., PMLR, Jul. 2018, pp. 5872-5881.

[26] I. J. Liu, U. Jain, R. A. Yeh, and A. Schwing, "Cooperative exploration for multi-agent deep reinforcement learning," in Proc. Int. Conf. Mach. Learn., PMLR, Jul. 2021, pp. 6826-6836.

[27] H. Lee and J. Jeong, "Mobile robot path optimization technique based on reinforcement learning algorithm in warehouse environment," Appl. Sci., vol. 11, no. 3, p. 1209, 2021.

[28] L. Busoniu, R. Babuska, and B. De Schutter, "A comprehensive survey of multiagent reinforcement learning," IEEE Trans. Syst., Man, Cybern. Part C (Appl. Rev.), vol. 38, no. 2, pp. 156-172, 2008.

[29] R. Lowe, Y. I. Wu, A. Tamar, J. Harb, O. Pieter Abbeel, and I. Mordatch,"Multi-agent actor-critic for mixed cooperative-competitive environments,"Advances in Neural Information Processing Systems, vol. 30, 2017.

[30] J. K. Gupta, M. Egorov, and M. Kochenderfer, "Cooperative multi-agent control using deep reinforcement learning," in Autonomous Agents and Multiagent Systems: AAMAS 2017 Workshops, Best Papers, São Paulo, Brazil, May 8-12, 2017, Revised Selected Papers 16, Springer International Publishing, pp. 66-83, 2017.

[31] J. Bloom, P. Paliwal, A. Mukherjee, and C. Pinciroli, "Decentralized multiagent reinforcement learning with global state prediction," in 2023 IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS), pp. 8854-8861, 2023.

[32] S. Omidshafiei, J. Pazis, C. Amato, J. P. How, and J. Vian, "Deep decentralized multi-task multi-agent reinforcement learning under partial observability," in International Conference on Machine Learning, pp. 2681-2690, 2017.

[33] L. Kraemer and B. Banerjee, "Multi-agent reinforcement learning as a rehearsal for decentralized planning," Neurocomputing, vol. 190, pp. 82-94, 2016.
[34] Y. Zhou et al., "Is centralized training with decentralized execution framework centralized enough for MARL?," arXiv preprint arXiv:2305.17352, 2023.

[35] E. Boyarski, A. Felner, R. Stern, G. Sharon, O. Betzalel, D. Tolpin, and E. Shimony, "ICBS: The improved conflict-based search algorithm for multi-agent pathfinding," in *Proc. Int. Symp. Combinatorial Search*, vol. 6, no. 1, pp. 223–225, 2015.

[36] J. Li, A. Felner, E. Boyarski, H. Ma, and S. Koenig, "Improved heuristics for multi-agent path finding with conflict-based search," in *Proc. Int. Joint Conf. Artificial Intelligence* (IJCAI), vol. 2019, pp. 442–449, Aug. 2019.

[37] J. Ryu, Y. Kwon, S. Yoon, and K. Lee, "Conflict area prediction for boosting search-based multi-agent pathfinding algorithms," in *Proc. 2024 IEEE Int. Conf. Robotics and Automation* (ICRA), May 2024, pp. 14548–14554.

[38] E. Boyarski, A. Felner, P. Le Bodic, D. D. Harabor, P. J. Stuckey, and S. Koenig, "F-aware conflict prioritization & improved heuristics for conflict-based

search," in *Proc. AAAI Conf. Artificial Intelligence*, vol. 35, no. 14, pp. 12241–12248, May 2021.

[39] F. Bahrpeyma and D. Reichelt, "A review of the applications of multi-agent reinforcement learning in smart factories," *Frontiers in Robotics and AI*, vol. 9, p. 1027340, 2022.

[40] "Proximal Policy Optimization Family," MARLlib Documentation,Replicable-MARL,2023.[Online].Available:https://marllib.readthedocs.io/en/latest/algorithm/ppo_family.html.

[41] Y. Savid, R. Mahmoudi, R. Maskeliūnas, and R. Damaševičius, "Simulated autonomous driving using reinforcement learning: A comparative study on unity's ML-agents framework," Information, vol. 14, no. 5, p. 290, 2023.

