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DAFTAR PUSTAKA

Almasri, M., Elleithy, K., & Alajlan, A. (2015). Sensor fusion based model for collision free mobile robot navigation. *Sensors*, *16*(1), 24.

Alpaydin, E. (2020). *Introduction to machine learning*. MIT press.

Berger-Tal, O., Nathan, J., Meron, E., & Saltz, D. (2014). The exploration-exploitation dilemma: a multidisciplinary framework. *PloS One*, *9*(4), e95693.

Brunton, S. L., & Kutz, J. N. (2022). *Data-driven science and engineering: Machine learning, dynamical systems, and control*. Cambridge University Press.

Duguleana, M., & Mogan, G. (2016). Neural networks based reinforcement learning for mobile robots obstacle avoidance. *Expert Systems with Applications*, *62*, 104–115.

Fabregas, E., Farias, G., Aranda-Escolástico, E., Garcia, G., Chaos, D., Dormido-Canto, S., & Bencomo, S. D. (2019). Simulation and experimental results of a new control strategy for point stabilization of nonholonomic mobile robots. *IEEE Transactions on Industrial Electronics*, *67*(8), 6679–6687.

Fabregas, E., Farias, G., Peralta, E., Vargas, H., & Dormido, S. (2016). Teaching control in mobile robotics with V-REP and a Khepera IV library. *2016 IEEE Conference on Control Applications (CCA)*, 821–826.

Farias, G., Fabregas, E., Peralta, E., Torres, E., & Dormido, S. (2017). A Khepera IV library for robotic control education using V-REP. *IFAC-PapersOnLine*, *50*(1), 9150–9155.

Farias, G., Fabregas, E., Peralta, E., Vargas, H., Hermosilla, G., Garcia, G., & Dormido, S. (2018). A neural network approach for building an obstacle detection model by fusion of proximity sensors data. *Sensors*, *18*(3), 683.

Farias, G., Fabregas, E., Torres, E., Bricas, G., Dormido-Canto, S., & Dormido, S. (2020). A distributed vision-based navigation system for khepera IV mobile robots. *Sensors*, *20*(18), 5409.

Farias, G., Garcia, G., Montenegro, G., Fabregas, E., Dormido-Canto, S., & Dormido, S. (2020). Position control of a mobile robot using reinforcement learning. *IFAC-PapersOnLine*, *53*(2), 17393–17398.

Fernández, A. (2019). Artificial intelligence in financial services. *Banco de Espana Article*, *3*, 19.

Francisco Quiroga. (2020). *Gym_Env_Khepera_IV*. https://github.com/Fco-Quiroga/gym-kheperaposition

Gogoi, B. J., & Mohanty, P. K. (2022). A Braitenberg Path Planning Strategy for E-puck Mobile Robot in Simulation and Real-Time Environments. In *Applications of Computational Methods in Manufacturing and Product Design: Select Proceedings of IPDIMS 2020* (pp. 135–151). Springer.

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Goldberg, D. E., & Holland, J. H. (1988). *Genetic Algorithms and Machine Learning*. *3*, 95–99.

Huang, G. Bin, Zhu, Q. Y., & Siew, C. K. (2006). Extreme learning machine: Theory and applications. *Neurocomputing*, *70*(1–3), 489–501. https://doi.org/10.1016/j.neucom.2005.12.126

Indrasari, W., Iswanto, B., & Andayani, M. (2018). Early Warning System of Flood Disaster Based on Ultrasonic Sensors and Wireless Technology. *IOP Conference Series: Materials Science and Engineering*, *335*, 12005. https://doi.org/10.1088/1757-899X/335/1/012005

Karuna, G., Kumar, R. P., Sai, V. T. S., Abhishek, J., Shashikanth, M., & Kashyap, B. (2023). Motorcycle Crash Detection and Alert System using IoT. *E3S Web of Conferences*, *391*, 01145.

Ketan Doshi. (2020). *Reinforcement Learning Explained Visually (Part 5): Deep Q Networks, step-by-step*. https://towardsdatascience.com/reinforcement-learning-explained-visually-part-5-deep-q-networks-step-by-step-5a5317197f4b

Lin, P., Abney, K., & Jenkins, R. (2017). *Robot ethics 2.0: From autonomous cars to artificial intelligence*. Oxford University Press.

Loganathan, A., & Ahmad, N. S. (2023). A systematic review on recent advances in autonomous mobile robot navigation. *Engineering Science and Technology, an International Journal*, *40*, 101343.

Maghfiroh, H., Saputro, J. S., Hermanu, C., Ibrahim, M. H., & Sujono, A. (2021). Performance Evaluation of Different Objective Function in PID Tuned by PSO in DC-Motor Speed Control. *IOP Conference Series: Materials Science and Engineering*, *1096*(1), 012061.

Nayak, A., & Dutta, K. (2017). *Impacts of Machine Learning and Artificial Intelligence on Mankind*.

Peralta, E., Fabregas, E., Farias, G., Vargas, H., & Dormido, S. (2016). Development of a Khepera IV Library for the V-REP Simulator. *IFAC-PapersOnLine*, *49*(6), 81–86. https://doi.org/10.1016/j.ifacol.2016.07.157

Puterman, M. L. (2014). *Markov decision processes: discrete stochastic dynamic programming*. John Wiley & Sons.

Qiang, W., & Zhongli, Z. (2011). Reinforcement learning model, algorithms and its application. *2011 International Conference on Mechatronic Science, Electric Engineering and Computer (MEC)*, 1143–1146.

Quiroga, F., Hermosilla, G., Farias, G., Fabregas, E., & Montenegro, G. (2022). Position control of a mobile robot through deep reinforcement learning. *Applied Sciences*, *12*(14), 7194.

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Raharjo, S. B., & Sutopo, B. (2004). Robot Pengikut Garis Berbasis Mikrokontroler AT89C51 Menggunakan Sensor Infra Merah. *Makalah Ilmiah. Teknik Elektro UGM, Yogyakarta. Indonesia*.

Roihan, A., Sunarya, P. A., & Wijaya, C. (2019). *Auto Tee Prototype as Tee Golf Automation in Golf Simulator Studio*.

Russell, S., & Norvig, P. (2016). *Artificial Intelligence A Modern Approach Fourth Edition Global Edition.*

Soares, J. M., Navarro, I., & Martinoli, A. (2016). The Khepera IV mobile robot: performance evaluation, sensory data and software toolbox. *Robot 2015: Second Iberian Robotics Conference: Advances in Robotics, Volume 1*, 767–781.

Somvanshi, M., & Chavan, P. (2016). *A Review of Machine Learning Techniques using Decision Tree and Support Vector Machine*.

Sutton, R. S., & Barto, A. G. (2018). *Reinforcement learning: An introduction*. MIT press.

Thupae, R., Isong, B., Gasela, N., & Abu-Mahfouz, A. (2018). *Machine Learning Techniques for Traffic Identification and Classifiacation in SDWSN: a survey*.

Villela, V. J. G., Parkin, R., Parra, M. L., González, J. M. D., & Liho, M. J. G. (2004). A wheeled mobile robot with obstacle avoidance capability. *Ingeniería Mecánica. Tecnología y Desarrollo*, *1*(5), 159–166.

Wang, B., Liu, Z., Li, Q., & Prorok, A. (2020). Mobile robot path planning in dynamic environments through globally guided reinforcement learning. *IEEE Robotics and Automation Letters*, *5*(4), 6932–6939.

Wang, Y., Fang, Y., Lou, P., Yan, J., & Liu, N. (2020). Deep reinforcement learning based path planning for mobile robot in unknown environment. *Journal of Physics: Conference Series*, *1576*(1), 012009.

Zhao, W., Queralta, J. P., Qingqing, L., & Westerlund, T. (2020). Towards closing the sim-to-real gap in collaborative multi-robot deep reinforcement learning. *2020 5th International Conference on Robotics and Automation Engineering (ICRAE)*, 7–12.