



DAFTAR PUSTAKA

- Abdul Karim, M.Z. Bin dan Thamrin, N.M., 2022a, Servo Motor Controller using PID and Graphical User Interface on Raspberry Pi for Robotic Arm, *Journal of Physics: Conference Series*, [Online], 19 Juli 2022 Institute of Physics., hlm. tersedia di DOI:10.1088/1742-6596/2319/1/012015.
- Abdul Karim, M.Z. Bin dan Thamrin, N.M., 2022b, Servo Motor Controller using PID and Graphical User Interface on Raspberry Pi for Robotic Arm, *Journal of Physics: Conference Series*, [Online], 19 Juli 2022 Institute of Physics., hlm. tersedia di DOI:10.1088/1742-6596/2319/1/012015.
- Adar, N.G., 2021, Real time control application of the robotic arm using neural network based inverse kinematics solution, *Sakarya University Journal of Science*, 25 (3), 849–857,
- Allorerung, P.P., Erna, A., Bagussahrir, M. dan Alam, S., 2024, Analisis Performa Normalisasi Data untuk Klasifikasi K-Nearest Neighbor pada Dataset Penyakit, *JISKA (Jurnal Informatika Sunan Kalijaga)*, 9 (3), 178–191,
- Alpaydin, E., 2020, *Introduction to machine learning*, MIT press.
- Anshori, D.Y., 2017, *PENGENDALIAN POSISI SUDUT JOINT ROBOT MANIPULATOR 4 DOF (DEGREE OF FREEDOM)*.
- Aysal, F.E., Çelik, \.Ibrahim, Cengiz, E. dan Oğuz, Y., 2023, A comparison of multi-layer perceptron and inverse kinematic for RRR robotic arm, *Politeknik Dergisi*, 27 (1), 121–131,
- Azeez, M.I., Abdelhaleem, A.M.M., Elnaggar, S., Moustafa, K.A.F. dan Atia, K.R., 2023, Optimization of PID trajectory tracking controller for a 3-DOF robotic manipulator using enhanced Artificial Bee Colony algorithm, *Scientific Reports*, [Online] 13 (1), tersedia di DOI:10.1038/s41598-023-37895-3.



- Bai, Y. dan Hsieh, S.-J., 2024, A hybrid method using FABRIK and custom ANN in solving inverse kinematic for generic serial robot manipulator, *The International Journal of Advanced Manufacturing Technology*, 130 (9), 4883–4904,
- Calzada-Garcia, A., Victores, J.G., Naranjo-Campos, F.J. dan Balaguer, C., 2025, Inverse Kinematics for Robotic Manipulators via Deep Neural Networks: Experiments and Results, *Applied Sciences*, 15 (13), 7226,
- Çetinkaya, M.B., Yildirim, K. dan Yildirim, Ş., 2024, Trajectory analysis of 6-DOF industrial robot manipulators by using artificial neural networks, *Sensors (Basel, Switzerland)*, 24 (13), 4416,
- Dinata, R.K. dan Hasdyna, N., 2025, *SUPERVISED LEARNING: Strategi Prediksi dan Klasifikasi Data*, Serasi Media Teknologi.
- Gautam, R., Gedam, A., Zade, A. dan Mahawadiwar, A., 2008, Review on Development of Industrial Robotic Arm. *International Research Journal of Engineering and Technology*. [Online]. tersedia di www.irjet.net.
- Goodfellow, I., Bengio, Y., Courville, A. dan Bengio, Y., 2016, *Deep learning*, MIT press Cambridge.
- Haviland, J. dan Corke, P., 2023, Manipulator Differential Kinematics: Part I: Kinematics, Velocity, and Applications, *IEEE Robotics and Automation Magazine*, [Online] tersedia di DOI:10.1109/MRA.2023.3270228.
- Ho, C.-K., Chan, L.-W., King, C.-T. dan Yen, T.-Y., 2023, A deep learning approach to navigating the joint solution space of redundant inverse kinematics and its applications to numerical IK computations, *IEEE Access*, 112274–2290,
- Htun, Y.H.T., Hlaing, M.S. dan Hla, T.T., 2023, Master-Slave Synchronization of Robotic Arm using PID Controller, *Indonesian Journal of Electrical*



Engineering and Informatics, [Online] 11 (1), 77–87, tersedia di
DOI:10.52549/ijeei.v11i1.4171.

Ismail, K., 2023, *CNN Berbasis Blok Xception Menggunakan Fitur Koefisien Mel-frequency Terpilih pada Speech Emotion Recognition*,

Jagatheesaperumal, S.K., Rahouti, M., Ahmad, K., Al-Fuqaha, A. dan Guizani, M., 2022, The Duo of Artificial Intelligence and Big Data for Industry 4.0: Applications, Techniques, Challenges, and Future Research Directions, *IEEE Internet of Things Journal*, [Online] 9 (15), 12861–12885, tersedia di DOI:10.1109/JIOT.2021.3139827.

Javaid, M., Haleem, A., Singh, R.P. dan Suman, R., 2021, Substantial capabilities of robotics in enhancing industry 4.0 implementation, *Cognitive Robotics*, [Online] 158–75, tersedia di DOI:10.1016/j.cogr.2021.06.001.

Kalaycioglu, S., De Ruitter, A., Fung, E., Zhang, H. dan Xie, H., 2025, Exploring Analytical and Deep Learning Solutions for High-Degree-of-Freedom Inverse Kinematics, *Journal of Physics: Conference Series*, 2025 hlm. 12039,

Koenig, N. dan Howard, A., 2004, Design and use paradigms for gazebo, an open-source multi-robot simulator, *2004 IEEE/RSJ international conference on intelligent robots and systems (IROS)(IEEE Cat. No. 04CH37566)*, 2004 hlm. 2149–2154,

Lu, J., Zou, T. dan Jiang, X., 2022, A neural network based approach to inverse kinematics problem for general six-axis robots, *Sensors*, 22 (22), 8909,

Maulani, G., Hasan, F.N., Setiawan, D., Bowo, I.T., Ardhana, V.Y.P., Ramdhani, Y., Inayah, I., Ardiantoro, L., Sugianto, C.A., Chandra, R. dan others, 2025, *Machine Learning*, Mega Press Nusantara.



- Narayan, P., Kumar, S.A., Prasad, A. dan Sharma, B., 2025, A Systematic Literature Review: Fourier Analysis as a Mathematical Tool for Robot Navigation, *IEEE Access*,
- Pérez-Enciso, M. dan Zingaretti, L.M., 2019, A guide for using deep learning for complex trait genomic prediction. *Genes*. [Online]. 10 (7). tersedia di DOI:10.3390/genes10070553.
- Prasetya, I.E. dan Agustinah, T., 2015, Inverse Kinematics With Closed Form Solution For Denso Robot Manipulator, *Jurnal Teknik ITS*, 4 (1), A77–A82,
- Russell, S.J. dan Norvig, P., 2021, *Artificial Intelligence: A Modern Approach, Global Edition 4e*,
- Saputro, A.K., Rahmawati, D., Febriana, I., Ibadillah, A.F., Ulum, M. dan Haryanto, H., 2025, Implementation of Inverse Kinematics System in Robotic Arm for Glass Pick and Place Operations, *Jambura Journal of Electrical and Electronics Engineering*, 7 (1), 63–69,
- Sayaputra, A., 2025, Implementation of Machine Learning Algorithms for Predicting Student Final GPA Using Multiclass Classification Models, *Journal of Artificial Intelligence and Software Engineering*, 5 (2), 660–675,
- Sen, S., Sugiarto, D. dan Rochman, A., 2020, Komparasi metode multilayer perceptron (MLP) dan long short term memory (LSTM) dalam peramalan harga beras, *Ultimatics: Jurnal Teknik Informatika*, 12 (1), 35–41,
- Shareef, I., 2024, An Artificial Neural Network-based Approach for Inverse Kinematics of PUMA 260 Robot, *International Journal of Integrated Engineering*, 16 (5), 373–384,
- Surati, S., Hedao, S., Rotti, T., Ahuja, V. dan Patel, N., 2021, Pick and Place Robotic Arm: A Review Paper, *International Research Journal of Engineering and Technology*, [Online] tersedia di www.irjet.net.



- Tandon, D., dan Vishal, K., 2018, Design and Development of Robotic Arm Remote Controlled Through TCP/IP Network, *GIAP Journals (Gyandhara International Academic Publication)*,
- Tola, D. dan Corke, P., 2023, Understanding urdf: A survey based on user experience, *2023 IEEE 19th International Conference on Automation Science and Engineering (CASE)*, 2023 hlm. 1–7,
- Tribuana, D., Maramis, L., Resky, A.M., Hidayat, R. dan others, 2025, *Deep Learning*, Serasi Media Teknologi.
- Trullo, H.D. dan Alban, O.A.V., t.t., *A Systematic Review of Inverse Kinematics Methods for Fixed-Base Serial Manipulators: Analytical, Numerical, and Machine Learning Methods*,
- Wang, R., Wang, M., Zhao, Q., Gong, Y., Zuo, L., Zheng, X. dan Gao, H., 2024, A Novel Obstacle Traversal Method for Multiple Robotic Fish Based on Cross-Modal Variational Autoencoders and Imitation Learning, *Biomimetics*, 9 (4), 221,
- Zhang, H., Jin, H., Liu, Z., Liu, Y., Zhu, Y. dan Zhao, J., 2020, Real-time kinematic control for redundant manipulators in a time-varying environment: Multiple-dynamic obstacle avoidance and fast tracking of a moving object, *IEEE Transactions on Industrial Informatics*, [Online] 16 (1), 28–41, tersedia di DOI:10.1109/TII.2019.2917392.
- Zhou, Y., Xie, L. dan Pan, H., 2022, Research on a PSO-H-SVM-Based Intrusion Detection Method for Industrial Robotic Arms, *Applied Sciences (Switzerland)*, [Online] 12 (6), tersedia di DOI:10.3390/app12062765.