

DAFTAR PUSTAKA

- Aboshosha, A., Haggag, A., George, N., Hamad, H.A., 2023. IoT-based data-driven predictive maintenance relying on fuzzy system and artificial neural networks. *Sci Rep* 13. <https://doi.org/10.1038/s41598-023-38887-z>
- Al-Faiz, M.Z., Ibrahim, A.A., Hadi, S.M., 2018. The Effect Of Z-Score Standardization On Binary Input Due The Speed Of Learning In Back-Propagation Neural Network, *Iraqi Journal of Information and Communications Technology(IJICT)*.
- Ali, H., Titah, R., 2021. Is big data used by cities? Understanding the nature and antecedents of big data use by municipalities. *Gov Inf Q* 38. <https://doi.org/10.1016/j.giq.2021.101600>
- Alogdianakis, F., Dimitriou, L., Charmpis, D.C., 2022. Data-driven recognition and modelling of deterioration patterns in the US National Bridge Inventory: A genetic algorithm-artificial neural network framework. *Advances in Engineering Software* 171. <https://doi.org/10.1016/j.advengsoft.2022.103148>
- Althaqafi, E., Chou, E., 2022. Developing Bridge Deterioration Models Using an Artificial Neural Network. *Infrastructures (Basel)* 7. <https://doi.org/10.3390/infrastructures7080101>
- Bermejo, J.F., Fernández, J.F.G., Polo, F.O., Márquez, A.C., 2019. A review of the use of artificial neural network models for energy and reliability prediction. A study of the solar PV, hydraulic and wind energy sources. *Applied Sciences (Switzerland)*. <https://doi.org/10.3390/app9091844>
- Callow, D., Lee, J., Blumenstein, M., Guan, H., Loo, Y.C., 2013. Development of hybrid optimisation method for Artificial Intelligence based bridge deterioration model - Feasibility study. *Autom Constr* 31, 83–91. <https://doi.org/10.1016/j.autcon.2012.11.016>
- Dananjoyo, R.A., Aminullah, A., Budi Nugroho, A.S., 2020. Penerapan Metode Life-Cycle Cost Dalam Perhitungan Evaluasi Ekonomi Jembatan Untuk Penentuan Prioritas Penanganan Jembatan. *Jurnal Teknosains* 9, 165. <https://doi.org/10.22146/teknosains.39052>
- Direktorat Jenderal Bina Marga, 2022. Pedoman Pemeriksaan Jembatan.
- Direktorat Jendral Bina Marga, 1993. Interurban Bridge Management System (IBMS).
- Fereshtehnejad, E., Shafieezadeh, A., Hur, J., 2022. Optimal budget allocation for bridge portfolios with element-level inspection data: a constrained integer linear programming formulation. *Structure and Infrastructure Engineering* 18, 864–878. <https://doi.org/10.1080/15732479.2021.1875489>
- Fernando, N., Kasun, K.D., Zhang, H. (Johnson), 2024. An artificial neural network (ANN) approach for early cost estimation of concrete bridge systems in developing countries: the case of Sri Lanka. *Journal of Financial Management of Property and Construction* 29, 23–51. <https://doi.org/10.1108/JFMPC-09-2022-0048>



- Frangopol, D.M., Dong, Y., Sabatino, S., 2017. Bridge life-cycle performance and cost: analysis, prediction, optimisation and decision-making. *Structure and Infrastructure Engineering* 13, 1239–1257. <https://doi.org/10.1080/15732479.2016.1267772>
- Galal Ali, G., Elsayegh, A., Assaad, R.H., El-adaway, I., 2019. Artificial Neural Network Model for Bridge Deterioration and Assessment.
- Harywijaya, W., Afifuddin, M., Isya, M., 2020. Penilaian Kondisi Jembatan Menggunakan Bridge Management System (BMS) Dan Bridge Condition Rating (BCR). *Jurnal Arsip Rekayasa Sipil dan Perencanaan* 3, 443–451. <https://doi.org/10.24815/jarsp.v2i2.16462>
- Haykin, S.S., 2009. *Neural networks and learning machines*. Prentice Hall/Pearson.
- He, Z., Song, Y., Guan, H., Yu, L., 2024. Predicting bridge condition index using an improved back-propagation neural network. *Alexandria Engineering Journal* 106, 328–336. <https://doi.org/10.1016/j.aej.2024.07.029>
- Hurt, M., Schrock, S.D., 2016. Bridge Elements and Materials, dalam: *Highway Bridge Maintenance Planning and Scheduling*. Elsevier, hlm. 31–98. <https://doi.org/10.1016/b978-0-12-802069-2.00002-7>
- Irawan, R., Wahyudi, A., Murtosidi, I., 2023. Development of bridge inspection quality assurance for sustainable bridge management system in Indonesia. *Prosiding KRTJ HPJI* 16, 1–14.
- Isaac Abiodun, O., Jantan, A., Esther Omolara, A., Victoria Dada, K., AbdElatif Mohamed, N., Arshad, H., 2018. State-of-the-art in artificial neural network applications: A survey. *Heliyon* 4, 938. <https://doi.org/10.1016/j.heliyon.2018>
- Laksono, N.B., Latief, Y., Trigunarsyah, B., 2025. Enhancing BIM Application for Bridge Maintenance and Preservation in Indonesia: A Comprehensive Mathematical Evaluation Through SEM PLS – ANN of Policy, Organization, and Funding Strategies. *International Journal of Engineering, Transactions A: Basics* 38, 894–907. <https://doi.org/10.5829/ije.2025.38.04a.18>
- Liu, S., Chang, R., Zuo, J., Webber, R.J., Xiong, F., Dong, N., 2021. Application of Artificial Neural Networks in Construction Management: Current Status and Future Directions. <https://doi.org/10.3390/app>
- Maldonado, S.L.L., Bowman, M.D., 2019. Life-Cycle Cost Analysis for Short- and Medium-Span Bridges. West Lafayette, IN. <https://doi.org/10.5703/1288284316919>
- McMillan, L., Varga, L., 2022. A review of the use of artificial intelligence methods in infrastructure systems. *Eng Appl Artif Intell*. <https://doi.org/10.1016/j.engappai.2022.105472>



Sensitivity Analysis. *Advances in Civil Engineering* 2021. <https://doi.org/10.1155/2021/4598337>

Milić, I., Bleiziffer, J., 2024. Life cycle assessment of the sustainability of bridges: methodology, literature review and knowledge gaps. *Front Built Environ.* <https://doi.org/10.3389/fbuil.2024.1410798>

Moon, H.S., Chun, P.J., Kim, M.K., Lim, Y.M., 2020. Artificial neural network for vertical displacement prediction of a bridge from strains (part 2): Optimization of strain-measurement points by a genetic algorithm under dynamic loading. *Applied Sciences (Switzerland)* 10. <https://doi.org/10.3390/app10030777>

Nugroho, A.P., Aminullah, A., Supriyadi, B., 2017. Perbandingan Penilaian Kondisi Jembatan Metode BMS (Bridge Management System) Dan MPN (Maintenance Priority Number).

Puspitasari, S.D., Harahap, S., Astuti, P., 2023. A Critical Review of Bridge Management System in Indonesia. Singapore. https://doi.org/https://doi.org/10.1007/978-981-16-9348-9_33

Revias, R., Rahmadona, E., Marpen, R., 2024. Bridge Condition Assessment System Using The Bridge Management System (Bms) Method. hlm. 513–521. https://doi.org/10.2991/978-94-6463-386-3_52

Ryall, M., 2009. *Bridge Management, Second Edition (2nd ed.)*. CRC Press. <https://doi.org/https://doi.org/10.1201/b12866>

Sacconi, S., Ierimonti, L., Venanzi, I., Ubertini, F., 2021. Life-cycle cost analysis of bridges subjected to fatigue damage. *Journal of Infrastructure Preservation and Resilience* 2. <https://doi.org/10.1186/s43065-021-00040-3>

Santosh, T., Soni, R.K., Eswaraiah, C., Kumar, S., 2022. Application of artificial neural network method to predict the breakage properties of PGE bearing chromite ore. *Advanced Powder Technology* 33. <https://doi.org/10.1016/j.apt.2022.103450>

Sastrawiria, R.P.P., Seigo, N., 2024. The Intention of Bridge Asset Management Implementation in Indonesia. *Buildings* 14. <https://doi.org/10.3390/buildings14030622>

Shahrivar, F., Sidiq, A., Mahmoodian, M., Jayasinghe, S., Sun, Z., Setunge, S., 2025a. AI-based bridge maintenance management: a comprehensive review. *Artif Intell Rev* 58. <https://doi.org/10.1007/s10462-025-11144-7>

Shahrivar, F., Sidiq, A., Mahmoodian, M., Jayasinghe, S., Sun, Z., Setunge, S., 2025b. AI-based bridge maintenance management: a comprehensive review. *Artif Intell Rev* 58. <https://doi.org/10.1007/s10462-025-11144-7>



Sowemimo, A.D., Chorzepa, M.G., Birgisson, B., 2024. Recurrent Neural Network for Quantitative Time Series Predictions of Bridge Condition Ratings. *Infrastructures (Basel)* 9. <https://doi.org/10.3390/infrastructures9120221>

Suryanita, R., Adnan, A., 2013. Application of Neural Networks in Bridge Health Prediction based on Acceleration and Displacement Data Domain. Newswood Ltd. : International Association of Engineers.

Veza, I., Irianto, Panchal, H., Paristiawan, P.A., Idris, M., Fattah, I.M.R., Putra, N.R., Silambarasan, R., 2022. Improved prediction accuracy of biomass heating value using proximate analysis with various ANN training algorithms. *Results in Engineering* 16. <https://doi.org/10.1016/j.rineng.2022.100688>

Wan, C., Zhou, Z., Li, S., Ding, Y., Xu, Z., Yang, Z., Xia, Y., Yin, F., 2019a. Development of a bridge management system based on the building information modeling technology. *Sustainability (Switzerland)* 11. <https://doi.org/10.3390/su11174583>

Wan, C., Zhou, Z., Li, S., Ding, Y., Xu, Z., Yang, Z., Xia, Y., Yin, F., 2019b. Development of a bridge management system based on the building information modeling technology. *Sustainability (Switzerland)* 11. <https://doi.org/10.3390/su11174583>

Windarti, R., 2011. Bridge Management System (BMS).

Yang, Y., Xin, J., Tang, Q., Wang, Y., Yang, S.X., Zhou, J., 2025. Prediction method of condition degradation for network-level bridges based on U-Net++ convolutional neural network. *Measurement (Lond)* 241. <https://doi.org/10.1016/j.measurement.2024.115748>

Yari, N., 2018. New Model for Bridge Management System (BMS): Bridge Repair Priority Ranking System (BRPRS), Case Based Reasoning for Bridge Deterioration, Cost Optimization, and Preservation Strategy.

Zhang, T., Chen, H., Cui, X., Li, P., Zou, Y., 2024. Condition Rating Prediction for Highway Bridge Based on Elman Neural Networks and Markov Chains. *Applied Sciences (Switzerland)* 14. <https://doi.org/10.3390/app14041444>