

DAFTAR PUSTAKA

- Ahmed NA. 2023 Nov. What is A Confusion Matrix in Machine Learning? The Model Evaluation Tool Explained. *DataCamp*, siap terbit. [diakses 2024 Agu 23]. <https://www.datacamp.com/tutorial/what-is-a-confusion-matrix-in-machine-learning>.
- Alalibo Tamuno-Omie Joyce, Oborkhale L, Alalibo Tamuno-Omie J, Oborkhale LI, Omijeh BO. 2023. LEVERAGING TRANSFER LEARNING WITH A MODIFIED RESNET-50 MODEL FOR ENHANCED SOLID WASTE CLASSIFICATION. *Glob Sci Journals*. 11(10):195–202. www.globalscientificjournal.com.
- Baldé CP, Kuehr R, Yamamoto T, McDonald R, D’Angelo E, Althaf S, Bel G, Deubzer O, Fernandez-Cubillo E, Forti V, *et al*. 2024. The Global E-waste Monitor 2024. Geneva/Bonn. [diakses 2024 Agu 23]. <https://ewastemonitor.info/the-global-e-waste-monitor-2024/>.
- Chen L, Li S, Bai Q, Yang J, Jiang S, Miao Y. 2021. Review of Image Classification Algorithms Based on Convolutional Neural Networks. *Remote Sens*. 13(22). doi:10.3390/rs13224712.
- Cholissodin I, Sutrisno, Soebroto AA, Hasanah U, Febiola YI. 2020. *AI, MACHINE LEARNING & DEEP LEARNING (Teori & Implementasi)*.
- Dhruv P, Naskar S. 2020. Image Classification Using Convolutional Neural Network (CNN) and Recurrent Neural Network (RNN): A Review. Di dalam: Swain D, Pattnaik PK, Gupta PK, editor. *Machine Learning and Information Processing*. Volume ke-1101. Ed ke-1 Springer, Singapore. hlm 367–381.
- Direktorat Industri Elektronika & Telematika. 2021. Extended Producer Responsibility (EPR) dalam Mendukung Pengelolaan Sampah Elektronik.
- Elgeldawi E, Sayed A, Galal AR, Zaki AM. 2021. Hyperparameter Tuning for Machine Learning Algorithms Used for Arabic Sentiment Analysis. *Informatics*. 8(4):79. doi:10.3390/informatics8040079.
- Farag HH, Said LAA, Rizk MRM, Ahmed MAE. 2021. Hyperparameters optimization for ResNet and Xception in the purpose of diagnosing COVID-19. *J Intell Fuzzy Syst*. 41(2):3555–3571. doi:10.3233/JIFS-210925.
- Ghosh A, Sufian A, Sultana F, Chakrabarti A, De D. 2020. Fundamental Concepts of Convolutional Neural Network. Di dalam: Balas VE, Kumar R, Rajshree S, editor. *Recent Trends and Advances in Artificial Intelligence and Internet of Things*. Volume ke-172. Ed ke-1 Springer, Cham. hlm 519–567.
- Halbouni A, Gunawan TS, Habaebi MH, Halbouni M, Kartiwi M, Ahmad R. 2022. Machine Learning and Deep Learning Approaches for CyberSecurity: A Review. *IEEE Access*. 10:19572–19585. doi:10.1109/ACCESS.2022.3151248.
- Hasib KM, Iqbal MS, Shah FM, Al Mahmud J, Popel MH, Showrov MIH, Ahmed S, Rahman O. 2020. A Survey of Methods for Managing the Classification and Solution of Data Imbalance Problem. *J Comput Sci*. 16(11):1546–1557.

doi:10.3844/jcssp.2020.1546.1557.

- Islam N, Hasan Jony MM, Hasan E, Sutradhar S, Rahman A, Islam MM. 2023. EWasteNet: A Two-Stream Data Efficient Image Transformer Approach for E-Waste Classification. Di dalam: *2023 IEEE 8th International Conference On Software Engineering and Computer Systems (ICSECS)*. IEEE. hlm 435–440.
- Jain M, Kumar D, Chaudhary J, Kumar S, Sharma S, Singh Verma A. 2023. Review on E-waste management and its impact on the environment and society. *Waste Manag Bull.* 1(3):34–44. doi:10.1016/j.wmb.2023.06.004.
- Kartikayan P, Shrivastava G. 2021. Review on Emerging Trends in Detection of Plant Diseases using Image Processing with Machine Learning. *Int J Comput Appl.* 174(11):39–48. doi:10.5120/ijca2021920990.
- Kohn T. 2024. *Secrets of Machine Learning How It Works and What It Means for You*. Arumugam L, Williamson R, Koe SY, editor. Hackensack: World Scientific.
- Krichen M. 2023. Convolutional Neural Networks: A Survey. *Computers.* 12(8). doi:10.3390/computers12080151.
- Lingga LJ, Yuana M, Sari NA, Syahida HN, Sitorus C, Shahron. 2024. Sampah di Indonesia: Tantangan dan Solusi Menuju Perubahan Positif. *Innov J Soc Sci Res.* 4(4):12235–12247.
- Madhav AVS, Rajaraman R, Harini S, Kiliroor CC. 2022. Application of artificial intelligence to enhance collection of E-waste: A potential solution for household WEEE collection and segregation in India. *Waste Manag Res.* 40(7):1047–1053. doi:10.1177/0734242X211052846.
- Maharana K, Mondal S, Nemade B. 2022. A review: Data pre-processing and data augmentation techniques. *Glob Transitions Proc.* 3(1):91–99. doi:10.1016/j.gltp.2022.04.020.
- Mandal B, Okeukwu A, Theis Y. 2021 Apr 18. Masked Face Recognition using ResNet-50.
- Monoarfa S, Yulaswati V, Rohmattullah P, Medrilzam, Giastuti AH, Merylla CA, Putri AP, Amalia A, Yananto ID, Siregar MTJB, *et al.* 2024. Peta Jalan dan Rencana Aksi Nasional Ekonomi Sirkular Indonesia 2025-2045. Jakarta. [diakses 2024 Okt 8]. <https://lcdi-indonesia.id/wp-content/uploads/2024/07/RAN-ES-2025-2045.pdf>.
- Muhammad F, Murni Arimurthy A, Chahyati D. 2023. Transfer Learning dengan Metode Fine Tuning pada Model Network VGG16 dan ResNet50. *Indones J Comput Sci Attrib.* 12(1):361–374. doi:https://doi.org/10.33022/ijcs.v12i1.3130.
- Murel J, Kavlakoglu E. 2024 Feb 12. What is transfer learning? *IBM.*, siap terbit. [diakses 2024 Agu 23]. <https://www.ibm.com/topics/transfer-learning#:~:text=Transfer learning is a machine,task and%2For different dataset.&text=In other words%2C transfer learning,improve generalization in another setting.>
- Nashrullah F, Wibowo SA, Budiman G. 2020. The Investigation of *Epoch*

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KLASIFIKASI CITRA SAMPAH ELEKTRONIK MENGGUNAKAN ALGORITMA CONVOLUTIONAL NEURAL NETWORK ARSITEKTUR RESNET-50 DENGAN HYPERPARAMETER TUNING

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[www.upnvj.ac.id-www.library.upnvj.ac.id-www.repository.upnvj.ac.id]

- Parameters in ResNet-50 Architecture for Pornographic Classification: Investigasi Parameter *Epoch* Pada Arsitektur ResNet-50 Untuk Klasifikasi Pornografi. *Comple J Comput Electron Telecommun* . 1(1). doi:<https://doi.org/10.52435/complete.v1i1.51>.
- Nova S, Khotimah N, Aryati Wahyuningrum MY. 2024. PEMANFAATAN CHATBOT MENGGUNAKAN NATURAL LANGUAGE PROCESSING UNTUK PEMBELAJARAN DASAR-DASAR GUI TKINTER PADA BAHASA PEMROGRAMAN PYTHON. *J Ilm Tek*. 3(1):58–65.
- Nuariputri J, Maimunah, Sukmasetya P. 2023. Klasifikasi Jenis Sampah Menggunakan Base ResNet-50. *J Ilm Komputasi*. 22(3):379–386. doi:[10.32409/jikstik.22.3.3380](https://doi.org/10.32409/jikstik.22.3.3380).
- Nurhayati, Setyadinsa R, Pradana MG, Prasetyo D, Adrezo M, Pinastawa IWR, Yasmin JK, Sabilirrayad I, Pratama JD, Lantana DA, *et al*. 2024. *MACHINE LEARNING*. Rosmawarni N, editor. Yogyakarta: PT Penamuda Media .
- Prasad MNV, Vithanage M, Borthakur A. 2020. *Handbook of Electronic Waste Management*. Deans M, editor. Butterworth-Heinemann.
- Prihastomo Y, Winanti. 2024. TREN PERKEMBANGAN GRAPHICAL USER INTERFACE MELALUI PERMOHONAN DESAIN INDUSTRI DI INDONESIA. *J Commun Educ*. 18(2). doi:<https://doi.org/10.58217/joce-ip.v18i1.390>.
- Roseman M. 2020. Modern Tkinter for busy Python developers : quickly learn to create great looking user interfaces for Windows, Mac and Linux using Python's standard GUI toolkit.
- Rumagit AC. 2024. RANCANG BANGUN APLIKASI DETEKSI JENIS SAMPAH ORGANIK DAN SAMPAH DAUR ULANG DENGAN MENGGUNAKAN MODEL RESNET-50 BERBASIS ANDROID. Jakarta: Universitas Pembangunan Nasional Veteran Jakarta. [diakses 2025 Jan 3]. <http://repository.upnvj.ac.id/id/eprint/30214>.
- Sanjaya J, Ayub M. 2020. Augmentasi Data Pengenalan Citra Mobil Menggunakan Pendekatan Random Crop, Rotate, dan Mixup. *J Tek Inform dan Sist Inf*. 6(2):311–323. doi:[10.28932/jutisi.v6i2.2688](https://doi.org/10.28932/jutisi.v6i2.2688).
- Sarwinda D, Paradisa RH, Bustamam A, Anggia P. 2021. Deep Learning in Image Classification using Residual Network (ResNet) Variants for Detection of Colorectal Cancer. Di dalam: *Procedia Computer Science*. Volume ke-179. Elsevier B.V. hlm 423–431.
- Soesanto H, Maarif MS, Anwar S, Yurianto Y. 2022. Current status of household e-waste management in Jakarta, Indonesia. Di dalam: *IOP Conference Series: Earth and Environmental Science*. Volume ke-1109. Bogor: Institute of Physics.
- Taye MM. 2023a. Understanding of Machine Learning with Deep Learning: Architectures, Workflow, Applications and Future Directions. *Computers*. 12(5). doi:[10.3390/computers12050091](https://doi.org/10.3390/computers12050091).
- Taye MM. 2023b. Theoretical Understanding of Convolutional Neural Network:

- Concepts, Architectures, Applications, Future Directions. *Computation*. 11(3). doi:10.3390/computation11030052.
- Tian Y. 2020. Artificial Intelligence Image Recognition Method Based on Convolutional Neural Network Algorithm. *IEEE Access*. 8:125731–125744. doi:10.1109/ACCESS.2020.3006097.
- Victor Ikechukwu A, Murali S, Deepu R, Shivamurthy RC. 2021. ResNet-50 vs VGG-19 vs training from scratch: A comparative analysis of the segmentation and classification of Pneumonia from chest X-ray images. *Glob Transitions Proc*. 2(2):375–381. doi:10.1016/j.gltp.2021.08.027.
- Voskergian D, Ishaq I. 2023. Smart e-waste management system utilizing Internet of Things and Deep Learning approaches. *J Smart Cities Soc*. 2(2):77–98. doi:10.3233/scs-230007.
- Widyarsana IMW, Nurdiani DA. 2024. Identification of Electronic Waste (E-Waste) generation from the household and non-household sectors in Indonesia and its sustainable management system. Di dalam: *E3S Web of Conferences*. Volume ke-485. EDP Sciences.
- Xavero H. 2022. Implementasi metode Transfer Learning VGG-16 untuk pembuatan aplikasi mobile pengklasifikasi E-Waste berbasis Android. Depok: Universitas Indonesia. [diakses 2024 Agu 23]. <https://lib.ui.ac.id/detail?id=20519046&lokasi=lokal>.
- Yang S, Xiao W, Zhang M, Guo S, Zhao J, Shen F. 2022 Apr 18. Image Data Augmentation for Deep Learning: A Survey. <http://arxiv.org/abs/2204.08610>.
- Yanu F M, Yuwono B, Boedi P D. 2022. *Dasar Pengolahan Citra Digital*. Ed ke-2022. Yogyakarta: Lembaga Penelitian dan Pengabdian kepada Masyarakat.
- Zayd MH, Oktavian MW, Meranggi DGT, Figo JA, Yudistira N. 2022. Perbaikan klasifikasi sampah menggunakan pretrained Convolutional Neural Network. *Teknologi*. 12(1):1–8. doi:10.26594/teknologi.v0i0.2403.
- Zellatifanny CM. 2024 Jun 7. Harmonizing ESG Principles and Circular Economy Strategies for E-Waste Management in Indonesia - Modern Diplomacy. *Mod Dipl.*, siap terbit. [diakses 2024 Okt 7]. <https://moderndiplomacy.eu/2024/06/07/harmonizing-esg-principles-and-circular-economy-strategies-for-e-waste-management-in-indonesia/>.