

DAFTAR PUSTAKA

- [1] A. Yudha, “Integrasi Teknologi Wearable dalam Kesehatan dan Kebugaran,” *Jurnal Teknologi Pintar (JUTP)*, vol. 4, no. 2, pp. 1–19, May 2024, Accessed: Dec. 19, 2024. [Online]. Available: <http://teknologipintar.org/index.php/teknologipintar/article/view/566/551>
- [2] H. C. Ates, A. K. Yetisen, F. Güder, and C. Dincer, “Wearable devices for the detection of COVID-19,” *Nat Electron*, vol. 4, no. 1, pp. 13–14, Jan. 2021, doi: 10.1038/s41928-020-00533-1.
- [3] J. Greiwe and S. M. Nyenhuis, “Wearable Technology and How This Can Be Implemented into Clinical Practice,” *Curr Allergy Asthma Rep*, vol. 20, no. 8, p. 36, Jun. 2020, doi: 10.1007/s11882-020-00927-3.
- [4] Gartner, “Gartner Forecasts Global Spending on Wearable Devices to Total \$81.5 Billion in 2021,” Gartner, Inc. Accessed: Dec. 19, 2024. [Online]. Available: <https://www.gartner.com/en/newsroom/press-releases/2021-01-11-gartner-forecasts-global-spending-on-wearable-devices-to-total-81-5-billion-in-2021>
- [5] A. Arnaert, P. Sumbly, D. da Costa, Y. Liu, Z. Debe, and S. Charbonneau, “Acceptance of the Apple Watch Series 6 for Telemonitoring of Older Adults with Chronic Obstructive Pulmonary Disease: Qualitative Descriptive Study Part 1,” *JMIR Aging*, vol. 6, p. e41549, Dec. 2023, doi: 10.2196/41549.
- [6] L. Z. Pipek, R. F. V. Nascimento, M. M. P. Acencio, and L. R. Teixeira, “Comparison of SpO2 and heart rate values on Apple Watch and conventional commercial oximeters devices in patients with lung disease,” *Sci Rep*, vol. 11, no. 1, p. 18901, Sep. 2021, doi: 10.1038/s41598-021-98453-3.
- [7] M. A. I. N. R. Said, M. R. Faisal, D. Kartini, I. Budiman, and T. H. Saragih, “Analisis Perbandingan Metode Harmonic Meandan Local Mean Vector dalam Penyeleksian Tetangga Pada Algoritma KNN,” *Jurnal Sains dan Informatika*, vol. 9, no. 2, pp. 128–136, Nov. 2023, doi: <https://doi.org/10.34128/jsi.v9i2.376>.

- [8] M. Reza Pahlawan, A. Setyanto, and M. Rudyanto Arief, “Review Komprehensif Penggunaan Data Imbalance pada Metode Klasifikasi dalam Machine Learning,” *Journal of Electrical Engineering and Computer (JEECOM)*, vol. 6, no. 1, pp. 177–185, Apr. 2024, doi: <https://doi.org/10.33650/jeecom.v6i1.8510>.
- [9] B. Rosa Amelia, M. Fauzan, M. Rizky, and V. M. Khafiansyah, “Literatur Review: Penggunaan Support Vector Machine untuk Klasifikasi Penyakit Lambung,” *Buletin Ilmiah Ilmu Komputer dan Multimedia*, vol. 2, no. 3, pp. 511–514, Nov. 2024, [Online]. Available: <https://scholar.google.com>
- [10] A. Lachaud, M. Adam, and I. Mišković, “Comparative Study of Random Forest and Support Vector Machine Algorithms in Mineral Prospectivity Mapping with Limited Training Data,” *Minerals*, vol. 13, no. 8, Aug. 2023, doi: <https://doi.org/10.3390/min13081073>.
- [11] D. Fuller *et al.*, “Predicting lying, sitting, walking and running using Apple Watch and Fitbit data,” *BMJ Open Sport Exerc Med*, vol. 7, no. 1, pp. 1–6, Apr. 2021, doi: <https://doi.org/10.1136/bmjsem-2020-001004>.
- [12] R. Medikawati Taufiq, D. Toresa, and S. Handayani, “Optimasi Parameter Support Vector Machine dengan Particle Swarm Optimization untuk Prediksi Tunggakan Iuran Sekolah,” *Technologica*, vol. 3, no. 2, pp. 75–84, Jul. 2024, doi: <https://doi.org/10.55043/technologica.v3i2.162>.
- [13] M. Aljohani *et al.*, “An automated metaheuristic-optimized approach for diagnosing and classifying brain tumors based on a convolutional neural network,” *Results in Engineering*, vol. 23, p. 102459, Sep. 2024, doi: <https://doi.org/10.1016/j.rineng.2024.102459>.
- [14] G. Li, T. Zhang, C. Y. Tsai, L. Yao, Y. Lu, and J. Tang, “Review of the metaheuristic algorithms in applications: Visual analysis based on bibliometrics,” *Expert Syst Appl*, vol. 255, p. 124857, Dec. 2024, doi: [10.1016/J.ESWA.2024.124857](https://doi.org/10.1016/J.ESWA.2024.124857).
- [15] K. Rajwar, K. Deep, and S. Das, “An exhaustive review of the metaheuristic algorithms for search and optimization: taxonomy, applications, and open challenges,” *Artif Intell Rev*, vol. 56, no. 11, pp. 13187–13257, Apr. 2023, doi: <https://doi.org/10.1007/s10462-023-10470-y>.

- [16] M. R. Maulana, A. Sucipto, and H. Mulyo, “Optimisasi Parameter Support Vector Machine dengan Particle Swarm Optimization untuk Peningkatan Klasifikasi Diabetes,” *Jurnal Informatika Teknologi dan Sains (Jinteks)*, vol. 6, no. 4, pp. 802–812, Nov. 2024.
- [17] B. F. Rochman, A. Rahim, and T. A. Y. Siswa, “Optimasi Algoritma KNN dengan Parameter K dan PSO Untuk Klasifikasi Status Gizi Balita,” *Jurnal Media Informatika Budidarma*, vol. 8, no. 3, pp. 1609–1616, Jul. 2024, doi: 10.30865/mib.v8i3.7841.
- [18] P. A. Jusia, A. Rahim, H. Yani, and J. Jasmir, “Improving Performance of KNN and C4.5 using Particle Swarm Optimization in Classification of Heart Diseases,” *Jurnal Rekayasa Sistem dan Teknologi Informasi*, vol. 8, no. 3, pp. 333–339, Jun. 2024, doi: 10.29207/resti.v8i3.5710.
- [19] H. S. Salem, M. A. Mead, and G. S. El-Taweel, “Particle Swarm Optimization-Based Hyperparameters Tuning of Machine Learning Models for Big COVID-19 Data Analysis,” *Journal of Computer and Communications*, vol. 12, no. 03, pp. 160–183, Mar. 2024, doi: 10.4236/jcc.2024.123010.
- [20] M. Bagus Prayogi, I. Irawan, Y. I. Fajar, and K. Kunci, “Perbandingan Algoritma ID3, Naive Bayes, SVM Berbasis PSO untuk Prediksi Serangan Jantung,” *Mdp Student Conference*, vol. 3, no. 1, pp. 22–28, Apr. 2024, doi: <https://doi.org/10.35957/mdp-sc.v3i1.6979>.
- [21] R. N. Handayani and D. Tjahjadi, “Optimasi Support Vector Machine Menggunakan Particle Swarm Optimization untuk Klasifikasi Multiclass Dataset,” *Jurnal Riset Sains dan Informatika*, vol. 5, no. 1, pp. 120–126, Feb. 2023, doi: <https://doi.org/10.51977/jti.v5i1.1069>.
- [22] S. W. Lubis, P. P. Adikara, and B. Darma, “Optimasi Hyperparameter Support Vector Machine dengan Particle Swarm Optimization Terhadap Klasifikasi Citra Digital Imbalanced,” *Jurnal Pengembangan Teknologi Informasi dan Ilmu Komputer*, vol. 8, no. 3, Mar. 2024.
- [23] D. Saputra, W. Irmayani, D. Purwaningtias, and J. Sidauruk, “A Comparative Analysis of C4.5 Classification Algorithm, Naïve Bayes and Support Vector Machine Based on Particle Swarm Optimization (PSO) for Heart Disease

- Prediction,” *International Journal of Advances in Data and Information Systems*, vol. 2, no. 2, pp. 84–95, Oct. 2021, doi: <https://doi.org/10.25008/ijadis.v2i2.1221>.
- [24] A. Arnap and D. Kusriani, “Optimasi Model Support Vector Machine dengan Particle Swarm Optimization untuk Mendeteksi Serangan Injeksi SQL (Studi Kasus : PT. Naisha Inspirasi Muslimah),” *Jurnal Open Access Yayasan Lentera Dua Indonesia*, vol. 5, no. 2, pp. 75–86, Sep. 2024, doi: [10.36802/jnanaloka.2024.v5-no2-75-86](https://doi.org/10.36802/jnanaloka.2024.v5-no2-75-86).
- [25] E. Purwaningsih and E. Nurelasari, “Peningkatan Akurasi Metode Support Vector Machine melalui Particle Swarm Optimization pada Penyakit Ginjal Kronis,” *Information Management For Educators And Professionals*, vol. 9, no. 1, pp. 61–70, Jul. 2024, doi: <https://doi.org/10.51211/imbi.v9i1.2951>.
- [26] K. Li, C. Cardoso, A. Moctezuma-Ramirez, A. Elgalad, and E. Perin, “Heart Rate Variability Measurement through a Smart Wearable Device: Another Breakthrough for Personal Health Monitoring,” *Int J Environ Res Public Health*, vol. 20, no. 24, p. 7146, Dec. 2023, doi: <https://doi.org/10.3390/ijerph20247146>.
- [27] S. Apoorva, N. T. Nguyen, and K. R. Sreejith, “Recent developments and future perspectives of microfluidics and smart technologies in wearable devices,” *Lab Chip*, vol. 24, no. 7, pp. 1833–1866, Feb. 2024, doi: <https://doi.org/10.1039/D4LC00089G>.
- [28] M. P. Kusumo, *Buku Pemantauan Aktivitas Fisik*, Cetakan Pertama. Yogyakarta: The Journal Publishing, 2020. Accessed: Dec. 21, 2024. [Online]. Available: <https://repository.umy.ac.id/bitstream/handle/123456789/35896/Buku%20pemantauan%20aktivitas%20fisik.pdf?sequence=1>
- [29] Ibnu Daqiqil Id, *Machine Learning: Teori, Studi Kasus dan Implementasi Menggunakan Python*, Edisi 1. Ur Press, 2021. Accessed: Dec. 21, 2024. [Online].
- [30] O. Kadek *et al.*, “E-Module Interaktif Berbasis Flipbook pada Matakuliah Machine Learning untuk Meningkatkan Kreatifitas Mahasiswa,” *Jurnal*

- Penjaminan Mutu*, vol. 10, no. 1, pp. 45–51, Feb. 2024, doi: <https://doi.org/10.25078/jpm.v10i01.3603>.
- [31] R. R. Pratama, “Analisis Model Machine Learning Terhadap Pengenalan Aktivitas Manusia,” *Jurnal Manajemen, Teknik Informatika dan Rekayasa Komputer*, vol. 19, no. 2, pp. 302–311, May 2020, doi: [10.30812/matrik.v19i2.688](https://doi.org/10.30812/matrik.v19i2.688).
- [32] R. Ramadhandi, S., R. M., and Y. A. Hambali, “Implementasi Metode Machine Learning Menggunakan Algoritma Evolving Artificial Neural Network pada Kasus Prediksi Diagnosis Diabetes,” *Jurnal Aplikasi dan Teori Ilmu Komputer*, vol. 3, no. 2, pp. 85–97, Sep. 2020, doi: <https://doi.org/10.17509/jatikom.v3i2.27885>.
- [33] V. Muslimah *et al.*, *Kemajuan dalam Ilmu Informatika Dari Decision Support System Menuju Artificial Intelligence*, Cetakan Pertama. Yogyakarta: UAD PRESS, 2024.
- [34] James Loy, *Neural Network Projects with Python*, Edisi 1. Packt Publishing, 2019.
- [35] A. Wijoyo, A. Y. Saputra, S. Ristanti, R. Sya’ban, M. Amalia, and R. Febriansyah, “Pembelajaran Machine Learning,” *Jurnal Ilmu Komputer dan Science*, vol. 3, no. 2, pp. 375–380, Feb. 2024.
- [36] G. Kantayeva, J. Lima, and A. I. Pereira, “Application of machine learning in dementia diagnosis: A systematic literature review,” *Heliyon*, vol. 9, no. 11, p. e21626, Nov. 2023, doi: <https://doi.org/10.1016/j.heliyon.2023.e21626>.
- [37] J. Cahya Mestika, M. Oktavio Selan, and M. Iqbal Qadafi, “Menjelajahi Teknik-Teknik Supervised Learning untuk Pemodelan Prediktif Menggunakan Python,” *Buletin Ilmiah Ilmu Komputer dan Multimedia*, vol. 99, no. 99, pp. 216–2019, Jun. 2022, [Online]. Available: <https://jurnalmahasiswa.com/index.php/biikma>
- [38] I. Shaer and A. Shami, “Data-driven methods for the reduction of energy consumption in warehouses: Use-case driven analysis,” *Internet of Things (Netherlands)*, vol. 23, pp. 1–24, Aug. 2023, doi: <https://doi.org/10.1016/j.iot.2023.100882>.

- [39] M. Pandia, P. Sihombing, P. Simamora, and R. Kaban, “Kajian Literatur Multimedia Retrieval: Machine Learning untuk Pengenalan Wajah,” *Jurnal Ilmu Komputer dan Sistem Informasi*, vol. 7, no. 1, pp. 161–166, Feb. 2024, doi: <https://doi.org/10.55338/jikoms.v7i1.2758>.
- [40] Y. Heryadi and T. Wahyono, *Machine Learning: Konsep dan Implementasi*, Cetakan 1. Yogyakarta: Penerbit Gava Media, 2020.
- [41] W. Budiharto, *Machine Learning dan Computational Intelligence*, Edisi 1. Yogyakarta: C.V Andi Offset, 2016.
- [42] R. S. Tantika and A. Kudus, “Penggunaan Metode Support Vector Machine Klasifikasi Multiclass pada Data Pasien Penyakit Tiroid,” *Bandung Conference Series: Statistics*, vol. 2, no. 2, pp. 159–166, Jul. 2022, doi: [10.29313/bcss.v2i2.3590](https://doi.org/10.29313/bcss.v2i2.3590).
- [43] R. T. Handayanto and Herlawati, *Data Mining dan Machine Learning Menggunakan Matlab dan Python*. Bandung: Informatika Bandung, 2020.
- [44] B. Santosa and T. J. Ai, *Pengantar Metaheuristik: Implementasi dengan Matlab*, Edisi Pertama., vol. 1. Surabaya: ITS Tekno Sains, 2017.
- [45] Khanduja, Neha, Bhusan, and Bharat, *Metaheuristic and Evolutionary Computation: Algorithms and Applications*, vol. 916. Singapore: Springer Singapore, 2021. doi: [10.1007/978-981-15-7571-6_10](https://doi.org/10.1007/978-981-15-7571-6_10).
- [46] F. Sabry, *Support Vector Machine: Fundamentals and Applications*, 1st ed. One Billion Knowledgeable, 2023.
- [47] K. R. Singh and S. Dash, “Early detection of neurological diseases using machine learning and deep learning techniques: A review,” *Artificial Intelligence for Neurological Disorders*, pp. 1–24, Jan. 2023, doi: [10.1016/B978-0-323-90277-9.00001-8](https://doi.org/10.1016/B978-0-323-90277-9.00001-8).
- [48] K. Putri and A. Raharja, “Implementasi Algoritma Support Vector Machine dalam Klasifikasi Deteksi Depresi dari Postingan pada Media Sosial,” *Jurnal Nasional Teknologi Informasi dan Aplikasinya*, vol. 2, no. 1, pp. 193–202, Nov. 2023.
- [49] I. M. Putra, M. Y. H. Setyawan, and R. Habibi, *Panduan Lengkap Klasifikasi Dokumen Arsip Program Studi Menggunakan Support Vector Machine*. Cv. Kreatif Industri Nusantara, 2020.

- [50] S. Adi and A. Wintarti, “Komparasi Metode Support Vector Machine (SVM), K-Nearest Neighbors (KNN), dan Random Forest (RF) untuk Prediksi Penyakit Gagal Jantung,” *Jurnal Ilmiah Matematika*, vol. 10, no. 2, pp. 258–268, Jul. 2022, doi: <https://doi.org/10.26740/mathunesa.v10n2.p258-268>.
- [51] M. A. Nemitallah *et al.*, “Artificial intelligence for control and optimization of boilers’ performance and emissions: A review,” *J Clean Prod*, vol. 417, p. 138109, Sep. 2023, doi: 10.1016/J.JCLEPRO.2023.138109.
- [52] A. Kowalczyk, *Support Vector Machines Succinctly*. Syncfusion, 2017. Accessed: Nov. 24, 2024. [Online]. Available: www.syncfusion.com
- [53] Binoy, “Support Vector Machine in Machine Learning,” Scaler Topics. Accessed: Jun. 22, 2025. [Online]. Available: <https://www.scaler.com/topics/machine-learning/support-vector-machine/>
- [54] Josiah Adesola, “SVM Kernels Explained: How to Tackle Nonlinear Data in Machine Learning,” freecodecamp. Accessed: Jun. 22, 2025. [Online]. Available: <https://www.freecodecamp.org/news/svm-kernels-how-to-tackle-nonlinear-data-in-machine-learning/>
- [55] Y. Wang, J. Baek, Y. Tang, J. Du, M. Hillman, and J. S. Chen, “Support vector machine guided reproducing kernel particle method for image-based modeling of microstructures,” *Comput Mech*, vol. 73, no. 4, pp. 907–942, Apr. 2024, doi: 10.1007/s00466-023-02394-9.
- [56] I. Bazar, F. Wajidi, and A. A. A. Cirua, “Analisis Sentimen Ulasan Aplikasi Wondr by BNI Menggunakan Algoritma SVM dengan Optimasi Kernel Trick,” *Jurnal Ilmiah Teknik dan Ilmu Komputer*, vol. 4, no. 2, pp. 69–81, May 2025, doi: 10.55123.
- [57] S. H. Pratiwi, W. Witanti, T. Hendro, U. J. Achmad, and Y. Abstract, “Optimasi Penentuan Vendor untuk Material Pesawat Menggunakan Algoritma Particle Swarm Optimization,” *Jurnal Ilmiah Wahana Pendidikan*, vol. 2024, no. 4, pp. 825–837, Jan. 2024, doi: 10.5281/zenodo.10537168.
- [58] A. S. Rahmadhnai, A. A. Supianto, and C. Dewi, “Penerapan Particle Swarm Optimization pada Algoritme K-Means untuk Pengelompokan Proses Berpikir Siswa Dalam Belajar,” *Jurnal Pengembangan Teknologi Informasi*

- dan Ilmu Komputer*, vol. 4, no. 6, pp. 1683–1692, Jun. 2020, [Online]. Available: <http://j-ptiik.ub.ac.id>
- [59] B. Santosa and P. Willy, *Metode Metaheuristik Konsep dan Implementasi*, Cetakan Pertama. Prima Printing, 2011.
 - [60] W. R. Abdul-Adheem, “An enhanced particle swarm optimization algorithm,” *International Journal of Electrical and Computer Engineering*, vol. 9, no. 6, pp. 4904–4907, Jun. 2019, doi: 10.11591/ijece.v9i6.pp4904-4907.
 - [61] M. Agus Dwiputra, I. Gede Pasek Suta Wijaya, and R. Dwiyanaputra, “Perancangan Mesin Klasifikasi Menggunakan Particle Swarm Optimization,” *Journal of Computer Science and Informatics Engineering*, vol. 8, no. 2, pp. 146–154, Dec. 2024, doi: 10.29303/jcosine.v8i2.614.
 - [62] A. Tharwat, H. Mahdi, M. Elhoseny, and A. E. Hassanien, “Recognizing human activity in mobile crowdsensing environment using optimized k-NN algorithm,” *Expert Syst Appl*, vol. 107, pp. 32–44, Oct. 2018, doi: 10.1016/j.eswa.2018.04.017.
 - [63] M. Vebriani and W. Yustanti, “Klasifikasi Deteksi Link Phising Dana Kaget Menggunakan Metode Support Vector Machine Berbasis Website,” *Journal of Informatics and Computer Science*, vol. 06, no. 02, pp. 408–416, Jul. 2024, [Online]. Available: <https://danakagetvezridd>.
 - [64] A. Jalil, A. Homaiddi, and Z. Fatah, “Implementasi Algoritma Support Vector Machine untuk Klasifikasi Status Stunting pada Balita,” *G-Tech: Jurnal Teknologi Terapan*, vol. 8, no. 3, pp. 2070–2079, Jul. 2024, doi: 10.33379/gtech.v8i3.4811.
 - [65] I. Markoulidakis and G. Markoulidakis, “Probabilistic Confusion Matrix: A Novel Method for Machine Learning Algorithm Generalized Performance Analysis,” *Technologies (Basel)*, vol. 12, no. 7, Jul. 2024, doi: 10.3390/technologies12070113.
 - [66] H. Fatoni, D. A. Maulana, and R. I. Adam, “Deteksi dan Klasifikasi Kendaraan Ringan dan Berat untuk Jalan Tol Menggunakan CNN,” *Jurnal Mahasiswa Teknik Informatika*, vol. 8, no. 6, pp. 11252–11259, Dec. 2024, doi: 10.36040/jati.v8i6.11202.

- [67] B. Ankrah, L. Brew, and J. Acquah, “Multi-Class Classification of Genetic Mutation Using Machine Learning Models,” *Computational Journal of Mathematical and Statistical Sciences*, vol. 3, no. 2, pp. 280–315, Nov. 2024, doi: 10.21608/cjmss.2024.267064.1040.