

DAFTAR PUSTAKA

- Abdelfattah, S., Baza, M., Mahmoud, M., Fouda, M. M., Abualsaud, K., Yaacoub, E., Alsabaan, M., & Guizani, M. (2023). Lightweight Multi-Class Support Vector Machine-Based Medical Diagnosis System with Privacy Preservation. *Sensors*, 23(22). <https://doi.org/10.3390/s23229033>
- Adi Putra, C., Pratama, R., Sutabri, T., Jenderal Yani No, J. A., & Selatan, S. (2023). *Analisis Manfaat Machine Learning Pada Next-generation Firewall Sophos Xg 330 Dalam Mengatasi Serangan Sql Injection*. <https://doi.org/10.36595/misi.v5i2>
- Afif Ibna Kadir Khan Turja, by. (2023). *An Efficient Deep Learning Approach to Classify White Blood Cells*.
- Agustian, D., Basuki Kurniawan, T., Surya Negara, E., & Novaria Kunang, Y. (2022). Utilizing Support Vector Machines to Recognize Pattern Numbers on Sheet C1 Ballots. In *JOURNAL OF DATA SCIENCE* (Vol. 2022). <http://ipublishing.intimal.edu.my/jods.html>
- Bank, D., Koenigstein, N., & Giryes, R. (2020). *Autoencoders*. <http://arxiv.org/abs/2003.05991>
- Bora, D. J., Kumar Gupta, A., & Khan, F. A. (2015). Comparing the Performance of L*A*B* and HSV Color Spaces with Respect to Color Image Segmentation. In *Certified Journal* (Vol. 9001, Issue 2). www.ijetae.com
- Branco, P., Torgo, L., & P. Ribeiro, R. (2017). Relevance Based Evaluation Metrics for Multi class Imbalanced Domains. In *Lecture Notes in Computer Science (including subseries Lecture Notes in Artificial Intelligence and Lecture Notes in Bioinformatics)*: Vol. 10235 *LNAI*. Springer Verlag. <https://doi.org/10.1007/978-3-319-57454-7>
- Chawla, N. V, Bowyer, K. W., Hall, L. O., & Kegelmeyer, W. P. (2002). SMOTE: Synthetic Minority Over-sampling Technique. In *Journal of Artificial Intelligence Research* (Vol. 16).
- Chen, H., Liu, J., Hua, C., Feng, J., Pang, B., Cao, D., & Li, C. (2022). Accurate classification of white blood cells by coupling pre-trained ResNet and DenseNet with SCAM mechanism. *BMC Bioinformatics*, 23(1). <https://doi.org/10.1186/s12859-022-04824-6>

- Chicco, D., & Jurman, G. (2020). The advantages of the Matthews correlation coefficient (MCC) over F1 score and accuracy in binary classification evaluation. *BMC Genomics*, 21(1). <https://doi.org/10.1186/s12864-019-6413-7>
- Cortes, C., Vapnik, V., & Saitta, L. (1995). Support-Vector Networks Editor. In *Machine Learning* (Vol. 20). Kluwer Academic Publishers.
- Devella, S., Yohannes, Y., & Adi Putra, C. (2021). *Penggunaan Fitur Saliency-SURF Untuk Klasifikasi Citra Sel Darah Putih Dengan Metode SVM*. 8(4). <http://jurnal.mdp.ac.id>
- Elreedy, D., Atiya, A. F., & Kamalov, F. (2023). A theoretical distribution analysis of synthetic minority oversampling technique (SMOTE) for imbalanced learning. *Machine Learning*. <https://doi.org/10.1007/s10994-022-06296-4>
- Feher, J. (2012). *White Blood Cells and Inflammation*.
- Glenn, A., & Armstrong, C. E. (2019). *Physiology of red and white blood cells*.
- Han, H., Wang, W.-Y., & Mao, B.-H. (2005). Borderline-SMOTE: A New Over-Sampling Method in Imbalanced Data Sets Learning. In *LNCS* (Vol. 3644).
- Han, J., Kamber, M., & Pei, J. (2012). *Data mining concepts and techniques, third edition*. Morgan Kaufmann Publishers. http://www.amazon.de/Data-Mining-Concepts-Techniques-Management/dp/0123814790/ref=tmm_hrd_title_0?ie=UTF8&qid=1366039033&sr=1-1
- Haris Munandar, V., & Aziz Assuja, M. (2021). DENOISING CITRA TULISAN TANGAN AKSARA LAMPUNG MENGGUNAKAN CONVOLUTIONAL AUTOENCODER. In *Jurnal Komputasi Z.A. Pagar Alam* (Vol. 9, Issue 2). [https://patrec.cs.tu-dortmund.de/\[13\]](https://patrec.cs.tu-dortmund.de/[13]).
- Hasdyna, N., & Kesuma Dinata, R. (2020). Analisis Matthew Correlation Coefficient pada K-Nearest Neighbor dalam Klasifikasi Ikan Hias. In *Informatics Journal* (Vol. 5, Issue 2).
- He, H., Bai, Y., Garcia, E. A., & Li, S. (2008). ADASYN: Adaptive synthetic sampling approach for imbalanced learning. *Proceedings of the International Joint Conference on Neural Networks*, 1322–1328. <https://doi.org/10.1109/IJCNN.2008.4633969>
- Hegde, R. B., Prasad, K., Hebbar, H., & Singh, B. M. K. (2019). Comparison of traditional image processing and deep learning approaches for classification of white blood cells in peripheral blood smear images.

- Biocybernetics and Biomedical Engineering*, 39(2), 382–392.
<https://doi.org/10.1016/j.bbe.2019.01.005>
- Huang, H., Liao, Z., Wei, X., & Zhou, Y. (2023). Combined Gaussian Mixture Model and Pathfinder Algorithm for Data Clustering. *Entropy*, 25(6).
<https://doi.org/10.3390/e25060946>
- Jiang, L., Tang, C., & Zhou, H. (2022). White blood cell classification via a discriminative region detection assisted feature aggregation network. *Biomedical Optics Express*, 13(10), 5246.
<https://doi.org/10.1364/boe.462905>
- Joloudari, J. H., Marefat, A., Nematollahi, M. A., Oyelere, S. S., & Hussain, S. (2023). Effective Class-Imbalance Learning Based on SMOTE and Convolutional Neural Networks. *Applied Sciences (Switzerland)*, 13(6).
<https://doi.org/10.3390/app13064006>
- Jurman, G., Riccadonna, S., & Furlanello, C. (2012). A comparison of MCC and CEN error measures in multi-class prediction. *PLoS ONE*, 7(8).
<https://doi.org/10.1371/journal.pone.0041882>
- Kouzehkanan, Z. M., Saghari, S., Tavakoli, E., Rostami, P., Abaszadeh, M., Mirzadeh, F., Shahabi Satlsar, E., Gheidishahran, M., Gorgi, F., Mohammadi, S., & Hosseini, R. (2021). *Raabbin-WBC: a large free access dataset of white blood cells from normal peripheral blood*.
<https://doi.org/10.1101/2021.05.02.442287>
- Krawczyk, B., Bellinger, C., Corizzo, R., & Japkowicz, N. (2021). Undersampling with Support Vectors for Multi-Class Imbalanced Data Classification. *Proceedings of the International Joint Conference on Neural Networks*, 2021-July.
<https://doi.org/10.1109/IJCNN52387.2021.9533379>
- Kurniawan, T. B., Kunang, Y. N., Bellini, Y., & Herdiansyah, I. (2023). *KLASIFIKASI OPINI MASYARAKAT TENTANG HARGA KARET MENGGUNAKAN MACHINE LEARNING* (Vol. 8, Issue 1).
- Lin, L. S., Kao, C. H., Li, Y. J., Chen, H. H., & Chen, H. Y. (2023). Improved support vector machine classification for imbalanced medical datasets by novel hybrid sampling combining modified mega-trend-diffusion and bagging extreme learning machine model. *Mathematical Biosciences and Engineering*, 20(10), 17672–17701.
<https://doi.org/10.3934/mbe.2023786>
- Louanjli, N., AyaAl-ibraheemi, Zakaria, M., Natiq, A., Boutiche, R., M. Mbaye, M., & Zarqaoui, M. (2021). *Infiltration of Leukocytes into the*

Human Ejaculate and its Association with Semen Quality and Oxidative Stress with Sperm Function, and Leukocytospermia Management.

- Mardiana, L., Kusnandar, D., & Satyahadewi, N. (2022). ANALISIS DISKRIMINAN DENGAN K FOLD CROSS VALIDATION UNTUK KLASIFIKASI KUALITAS AIR DI KOTA PONTIANAK. In *Buletin Ilmiah Mat. Stat. dan Terapannya (Bimaster)* (Vol. 11, Issue 1).
- Musliman, A. S., Fadlil, A., & Yudhana, A. (2021). Identification of White Blood Cells Using Machine Learning Classification Based on Feature Extraction. *Jurnal Online Informatika*, 6(1), 63. <https://doi.org/10.15575/join.v6i1.704>
- Mutlag, W. K., Ali, S. K., Aydam, Z. M., & Taher, B. H. (2020). Feature Extraction Methods: A Review. *Journal of Physics: Conference Series*, 1591(1). <https://doi.org/10.1088/1742-6596/1591/1/012028>
- Nabilla, P., Farhan Saputra, M., & Saputra, R. A. (2022). PERBANDINGAN RUANG WARNA RGB, HSV DAN YCBCR UNTUK SEGMENTASI CITRA IKAN KEMBUNG MENGGUNAKAN K-MEANS CLUSTERING. In *Jurnal Mahasiswa Teknik Informatika* (Vol. 6, Issue 2).
- Ngo, A. Q., Nguyen, L. Q., & Tran, V. Q. (2023). Developing interpretable machine learning-Shapley additive explanations model for unconfined compressive strength of cohesive soils stabilized with geopolymers. *PLoS ONE*, 18(6 June). <https://doi.org/10.1371/journal.pone.0286950>
- Nguyen, H., Cooper, E., & Kamei, K. (2009). Borderline over-sampling for imbalanced data classification. *International Journal of Knowledge Engineering and Soft Data Paradigms*, 3, 4–21. <https://doi.org/10.1504/IJKESDP.2011.039875>
- Nugroho, A. S., Witarto, A. B., & Handoko, D. (2003). *Support Vector Machine*. <http://asnugroho.net>
- Oyewole, G. J., & Thopil, G. A. (2023). Data clustering: application and trends. *Artificial Intelligence Review*, 56(7), 6439–6475. <https://doi.org/10.1007/s10462-022-10325-y>
- Paco Ramos, M. M., Paco Ramos, V. M., Fabian, A. L., & Osco Mamani, E. F. (2019). A Feature Extraction Method Based on Convolutional Autoencoder for Plant Leaves Classification. *Communications in Computer and Information Science*, 1096 CCIS, 143–154. https://doi.org/10.1007/978-3-030-36211-9_12

- Rama Bena Putra, P., & Setya Perdana, R. (2023). *Klasifikasi Judul Berita Online menggunakan Metode Support Vector Machine (SVM) dengan Seleksi Fitur Chi-square* (Vol. 7, Issue 5). <http://j-ptiik.ub.ac.id>
- Reynolds, D. (n.d.). *Gaussian Mixture Models* *.
- Riaz, F., Rehman, S., Ajmal, M., Hafiz, R., Hassan, A., Aljohani, N. R., Nawaz, R., Young, R., & Coimbra, M. (2020). Gaussian Mixture Model Based Probabilistic Modeling of Images for Medical Image Segmentation. *IEEE Access*, 8, 16846–16856. <https://doi.org/10.1109/ACCESS.2020.2967676>
- Riti, Y. F., Nugroho, H. A., Wibirama, S., Windarta, B., & Choridah, L. (2016). *Feature Extraction for Lesion Margin Characteristic Classification from CT Scan Lungs Image*.
- Rustam, F., Aslam, N., De La Torre Díez, I., Khan, Y. D., Mazón, J. L. V., Rodríguez, C. L., & Ashraf, I. (2022). White Blood Cell Classification Using Texture and RGB Features of Oversampled Microscopic Images. *Healthcare (Switzerland)*, 10(11). <https://doi.org/10.3390/healthcare10112230>
- Sonawane, J., Patil, M., & Birajdar, G. (2022). A novel feature extraction and mapping using convolutional autoencoder for enhancement of Underwater image/video. *ITM Web of Conferences*, 44, 03066. <https://doi.org/10.1051/itmconf/20224403066>
- Soofi, A. A., & Awan, A. (2017). Classification Techniques in Machine Learning: Applications and Issues. *Journal of Basic & Applied Sciences*, 13, 459–465.
- Sumpena Nugraha, A., & Purnamasari, K. K. (2019). *Penerapan Metode Support Vector Machine Pada Part Of Speech Tag Bahasa Indonesia*.
- Sutoyo, E., & Asri Fadlurrahman, M. (2020). *Penerapan SMOTE untuk Mengatasi Imbalance Class dalam Klasifikasi Television Advertisement Performance Rating Menggunakan Artificial Neural Network*.
- Tavakoli, S., Ghaffari, A., Kouzehkanan, Z. M., & Hosseini, R. (2021). New segmentation and feature extraction algorithm for classification of white blood cells in peripheral smear images. *Scientific Reports*, 11(1). <https://doi.org/10.1038/s41598-021-98599-0>
- Ushizima, D. M., Lorena, A. C., & De Carvalho, A. C. P. L. F. (2005). *Support Vector Machines Applied to White Blood Cell Recognition*. <https://ieeexplore.ieee.org/abstract/document/1587777>

- Vijaya, R., Reddy, K., & Ravi Babu, U. (2018). *A Review on Classification Techniques in Machine Learning*.
- wan, huan, wang, hui, scotney, bryan, & liu, juan. (2019). *A Novel Gaussian Mixture Model for Classification*.
- Wang, P., Fan, E., & Wang, P. (2021). Comparative analysis of image classification algorithms based on traditional machine learning and deep learning. *Pattern Recognition Letters*, 141, 61–67. <https://doi.org/10.1016/j.patrec.2020.07.042>
- Wang, Q., Qin, K., Lu, B., Sun, H., & Shu, P. (2023). Time-feature attention-based convolutional auto-encoder for flight feature extraction. *Scientific Reports*, 13(1). <https://doi.org/10.1038/s41598-023-41295-y>
- Widiarsa Kurniawan S, P., Kristian, Y., & Santoso, J. (2022). Pemanfaatan Deep Convolutional Auto-encoder untuk Mitigasi Serangan Adversarial Attack pada Citra Digital. *J-INTECH*.
- Wijayanti, N. putu yulika trisna, N. Kencana, eka, & Sumarjaya, i wayan. (2021). SMOTE: POTENSI DAN KEKURANGANNYA PADA SURVEI. *E-Jurnal Matematika*, 10(4), 235. <https://doi.org/10.24843/mtk.2021.v10.i04.p348>
- Yang, M., Kpalma, K., & Ronsin, J. (2010). *A Survey of Shape Feature Extraction Techniques*. <https://hal.science/hal-00446037>
- Yohannes, Y., Devella, S., & Hadisaputra, W. (2021). Pemanfaatan Scale Invariant Feature Transform Berbasis Saliency untuk Klasifikasi Sel Darah Putih. *Jurnal Teknik Informatika Dan Sistem Informasi*, 7(2). <https://doi.org/10.28932/jutisi.v7i2.3707>
- Yu, Y., Wang, C., Fu, Q., Kou, R., Huang, F., Yang, B., Yang, T., & Gao, M. (2023). Techniques and Challenges of Image Segmentation: A Review. In *Electronics (Switzerland)* (Vol. 12, Issue 5). MDPI. <https://doi.org/10.3390/electronics12051199>
- Yuranda, R., Sutabri, T., & Wahyuningsih, D. (2023). Machine Learning Approach in Evaluating News Labels Based on Titles: Online Media Case Study. *Jurnal Sisfokom (Sistem Informasi Dan Komputer)*, 12(3), 434–439. <https://doi.org/10.32736/sisfokom.v12i3.1808>
- Zhu, M., Chen, W., Sun, Y., & Li, Z. (2023). Improved U-net-based leukocyte segmentation method. *Journal of Biomedical Optics*, 28(04). <https://doi.org/10.1117/1.jbo.28.4.045002>