

DAFTAR PUSTAKA

- Abdiansah, A. dan Wardoyo, R., 2015, Time Complexity Analysis of Support Vector Machines (SVM) in LibSVM, *International Journal of Computer Applications*, [Online] 128 (3), 28–34, tersedia di DOI:10.5120/ijca2015906480.
- Bishop, C.M., 2006, *Pattern Recognition and Machine Learning*, Springer.
- de Campos, T.E., Babu, B.R. dan Varma, M., 2009, Character recognition in natural images, *Proceedings of the International Conference on Computer Vision Theory and Applications*, 2009 IEEE, Lisbon, Portugal., hal. 1–8,
- Chakraborty, N., Chatterjee, A., Singh, P.K., Mollah, A.F. dan Sarkar, R., 2021, Application of daisy descriptor for language identification in the wild, *Multimedia Tools and Applications*, [Online] 80323–344, tersedia di DOI:10.1007/s11042-020-09728-2.
- Chen, T. dan Guestrin, C., 2016, XGBoost: A scalable tree boosting system, *Proceedings of the ACM SIGKDD International Conference on Knowledge Discovery and Data Mining*, [Online], 2016 Association for Computing Machinery, San Francisco., hal. 785–794, tersedia di DOI:10.1145/2939672.2939785.
- Cho, H., Sung, M. dan Jun, B., 2016, Canny text detector: fast and robust scene text localization algorithm, *Proceedings of the IEEE Computer Society Conference on Computer Vision and Pattern Recognition*, [Online], 2016 IEEE, Las Vegas., hal. 3566–3573, tersedia di DOI:10.1109/CVPR.2016.388.
- Chollet, F., 2018, *Deep learning with Python*, Manning Publications Co., New York.
- Computador, C. de V. per, 2013, Focused Scene Text 2013-2015, [Online], tersedia di <https://rrc.cvc.uab.es/?ch=2&com=evaluation&task=1>.
- Dai, J., Wang, Z., Zhao, X. dan Shao, S., 2018, Scene text detection based on enhanced multi-channels MSER and a fast text grouping process, *2018 3rd IEEE International Conference on Cloud Computing and Big Data Analysis, ICCCBDA 2018*, [Online], 2018 IEEE, Chengdu., hal. 351–355, tersedia di DOI:10.1109/ICCCBDA.2018.8386541.
- Diaz-Escobar, J. dan Kober, V., 2020, Natural Scene Text Detection and Segmentation Using Phase-Based Regions and Character Retrieval, *Mathematical Problems in Engineering*, [Online] 20201–17, tersedia di DOI:10.1155/2020/7067251.
- Francis, L.M. dan Sreenath, N., 2017, TEDLESS - Text detection using least-square SVM from natural scene, *Journal of King Saud University - Computer and Information Sciences*, [Online] 32 (3), 287–299, tersedia di DOI:10.1016/j.jksuci.2017.09.001.
- Gonzalez, R.C. dan Woods, R.E., 2018, *Digital image processing*, 4th edisi, Pearson, New York.
- Gueguen, L., 2020, Maxtree, [Online], tersedia di <https://github.com/gueguenster/maxtree>, diakses 2 September 2021.
- Gupta, S. dan Kaur, Y., 2014, Review of Different Local and Global Contrast

- Enhancement Techniques for a Digital Image, *International Journal of Computer Applications*, [Online] 100 (18), 18–23, tersedia di DOI:10.5120/17625-8384.
- He, T., Huang, W., Qiao, Y. dan Yao, J., 2016, Text-attentional convolutional neural network for scene text detection, *IEEE Transactions on Image Processing*, [Online] 25 (6), 2529–2541, tersedia di DOI:10.1109/TIP.2016.2547588.
- Islam, R., Islam, R. dan Talukder, K., 2020, An enhanced msr pruning algorithm for detection and localization of bangla texts from scene images, *International Arab Journal of Information Technology*, [Online] 17 (3), 335–385, tersedia di DOI:10.34028/iajit/17/3/11.
- Karatzas, D., Gomez-Bigorda, L., Nicolaou, A., Ghosh, S., Bagdanov, A., Iwamura, M., Matas, J., Neumann, L., Chandrasekhar, V.R., Lu, S., Shafait, F., Uchida, S. dan Valveny, E., 2015, ICDAR 2015 competition on Robust Reading, *Proceedings of the International Conference on Document Analysis and Recognition, ICDAR*, [Online], 2015 IEEE, Tunis., hal. 1156–1160, tersedia di DOI:10.1109/ICDAR.2015.7333942.
- Karatzas, D., Shafait, F., Uchida, S., Iwamura, M., Bigorda, L.G.I., Mestre, S.R., Mas, J., Mota, D.F., Almazan, J.A. dan De Las Heras, L.P., 2013, ICDAR 2013 robust reading competition, *Proceedings of the International Conference on Document Analysis and Recognition, ICDAR*, [Online], 2013 IEEE, Washington, DC., hal. 1484–1493, tersedia di DOI:10.1109/ICDAR.2013.221.
- Kaur, A. dan Aayushi, 2014, Image segmentation using watershed transform, *International Journal of Soft Computing and Engineering (IJCSE)*, [Online] 4 (1), 2231–2307, tersedia di <http://www.ijscce.org/wp-content/uploads/papers/v4i1/A2060034114.pdf>.
- Kaur, M. dan Goyal, P., 2015, A review on region based segmentation, *International Journal of Science and Research*, [Online] 4 (4), 3194–3197, tersedia di www.ijsr.net.
- Kili Technology, 2020, Annotation tool for images, videos, text and pdf, [Online], tersedia di <https://kili-technology.com/annotation-tool/>, diakses 10 Maret 2022.
- Kim, J.H. dan Lee, S., 2011, KAIST Scene Text Database, [Online], tersedia di http://www.iapr-tc11.org/mediawiki/index.php/KAIST_Scene_Text_Database.
- Kosala, G., Harjoko, A. dan Hartati, S., 2020, Robust license plate detection in complex scene using MSER-dominant vertical sobel, *IAENG International Journal of Computer Science*, 47 (2), 214–222,
- Lecun, Y., Bengio, Y. dan Hinton, G., 2015, Deep learning, *Nature*, [Online] 521 (7553), 436–444, tersedia di DOI:10.1038/nature14539.
- Liao, W.H., Liang, Y.H. dan Wu, Y.C., 2015, An integrated approach for multilingual scene text detection, *7th International Conference of Soft Computing and Pattern Recognition*, [Online], 2015 IEEE, Fukuoka., hal. 211–217, tersedia di DOI:10.1109/SOCPAR.2015.7492809.
- Lin, C., 2019, Large-Scale Kernel Machines, *Large-Scale Kernel Machines*,

- [Online] 1–27, tersedia di DOI:10.7551/mitpress/7496.001.0001.
- Lin, H., Yang, P. dan Zhang, F., 2019, Review of scene text detection and recognition, *Archives of Computational Methods in Engineering*, [Online] 1–22, tersedia di DOI:10.1007/s11831-019-09315-1.
- Liu, X., Meng, G. dan Pan, C., 2019, Scene Text Detection and Recognition with Advances in Deep Learning: a survey, *International Journal on Document Analysis and Recognition*, [Online] 22 (2), 143–162, tersedia di DOI:10.1007/s10032-019-00320-5.
- Ma, J., Wang, W., Lu, K. dan Zhou, J., 2017, Scene text detection based on pruning strategy of MSER-trees and Linkage-trees, *Proceedings - IEEE International Conference on Multimedia and Expo*, [Online], 2017 IEEE, Hongkong., hal. 367–372, tersedia di DOI:10.1109/ICME.2017.8019440.
- Mol, J., Mohammed, A. dan Mahesh, B.S., 2018, Text recognition using poisson filtering and edge enhanced maximally stable extremal regions, *2017 International Conference on Intelligent Computing, Instrumentation and Control Technologies, ICICICT 2017*, [Online], 2018 IEEE, Kerala., hal. 302–306, tersedia di DOI:10.1109/ICICICT1.2017.8342578.
- Mondal, S., 2018, Hog Feature - A Survey, *IOSR Journal of Computer Engineering (IOSR-JCE)*, [Online] 20 (4), 1–11, tersedia di DOI:10.9790/0661-200402011.
- Mukhopadhyay, A., Kumar, S., Chowdhury, S.R., Chakraborty, N., Mollah, A.F., Basu, S. dan Sarkar, R., 2019, Multi-lingual scene text detection using one-class classifier, *International Journal of Computer Vision and Image Processing*, [Online] 9 (2), 48–65, tersedia di DOI:10.4018/ijcvip.2019040104.
- Munir, R., 2004, *Pengolahan citra digital dengan pendekatan algoritmik*, Informatika, Bandung.
- Naiemi, F., Ghods, V. dan Khalesi, H., 2020, Scene text detection using enhanced extremal region and convolutional neural network, *Multimedia Tools and Applications*, [Online] 79 (37–38), 27137–27159, tersedia di DOI:10.1007/s11042-020-09318-2.
- Neycharan, J.G., Ahmadyfard, A. dan Zahedi, M., 2019, Natural scene text localization using edge color signature, *International Journal of Nonlinear Analysis and Applications*, [Online] 10 (1), 229–237, tersedia di DOI:10.22075/IJNAA.2019.4066.
- Pan, Y.F., Hou, X. dan Liu, C.L., 2011, A hybrid approach to detect and localize texts in natural scene images, *IEEE Transactions on Image Processing*, [Online] 20 (3), 800–813, tersedia di DOI:10.1109/TIP.2010.2070803.
- Qiu, Q., Feng, Y., Yin, F. dan Liu, C.L., 2018, A flattened maximally stable extremal region method for scene text detection, *Communications in Computer and Information Science*, [Online] 757252–262, tersedia di DOI:10.1007/978-981-10-7389-2_25.
- Risnumawan, A., Shivakumara, P., Chan, C.S. dan Tan, C.L., 2014, A robust arbitrary text detection system for natural scene images, *Expert Systems with Applications*, [Online] 41 (18), 8027–8048, tersedia di DOI:10.1016/j.eswa.2014.07.008.

- Rosebrock, A., 2015, (Faster) Non-Maximum Suppression in Python, [Online], tersedia di <https://pyimagesearch.com/2015/02/16/faster-non-maximum-suppression-python/>, diakses 10 Juli 2022.
- Sánchez, V.D.A., 2003, Advanced support vector machines and kernel methods, *Neurocomputing*, [Online] 55 (1–2), 5–20, tersedia di DOI:10.1016/S0925-2312(03)00373-4.
- Solomon, C. dan Brecon, T., 2011, *Fundamentals of digital image processing*, Wiley BlackWell., [Online]. tersedia di DOI:10.1007/978-981-10-7272-7_1.
- Soni, R., Kumar, B. dan Chand, S., 2018a, Extracting text regions from scene images using weighted median filter and MSER, *Proceedings - IEEE 2018 International Conference on Advances in Computing, Communication Control and Networking, ICACCCN 2018*, [Online], 2018 IEEE, Greater Noida., hal. 915–920, tersedia di DOI:10.1109/ICACCCN.2018.8748492.
- Soni, R., Kumar, B. dan Chand, S., 2019, Text detection and localization in natural scene images based on text awareness score, *Applied Intelligence*, [Online] 49 (4), 1376–1405, tersedia di DOI:10.1007/s10489-018-1338-4.
- Soni, R., Kumar, B. dan Chand, S., 2018b, Text detection and localization in natural scene images using MSER and fast guided filter, *2017 4th International Conference on Image Information Processing, ICIIP*, [Online], 2018 IEEE, Shimla., hal. 351–356, tersedia di DOI:10.1109/ICIIP.2017.8313739.
- Souza, R., Tavares, L., Rittner, L. dan Lotufo, R., 2017, An overview of max-tree principles, algorithms and applications, *Proceedings - 2016 29th SIBGRAPI Conference on Graphics, Patterns and Images Tutorials, SIBGRAPI-T 2016*, [Online], 2017 Sao Paulo., hal. 15–23, tersedia di DOI:10.1109/SIBGRAPI-T.2016.011.
- Sun, L. dan Huo, Q., 2012, A component-tree based method for user-intention guided text extraction, *Proceedings of the 21st International Conference on Pattern Recognition (ICPR2012)*, 2012 IEEE, Tsukuba., hal. 633–636,
- Sun, L., Huo, Q., Jia, W. dan Chen, K., 2015, A robust approach for text detection from natural scene images, *Pattern Recognition*, [Online] 48 (9), 2906–2920, tersedia di DOI:10.1016/j.patcog.2015.04.002.
- Sun, L., Huo, Q., Jia, W. dan Chen, K., 2014, Robust text detection in natural scene images by generalized color-enhanced contrasting extremal region and neural networks, *22nd International Conference on Pattern Recognition*, [Online], 2014 IEEE, Stockholm., hal. 2715–2720, tersedia di DOI:10.1109/ICPR.2014.469.
- Sung, M.C., Jun, B., Cho, H. dan Kim, D., 2015, Scene text detection with robust character candidate extraction method, *Proceedings of the International Conference on Document Analysis and Recognition, ICDAR*, [Online], 2015 IEEE, Tunis., hal. 426–430, tersedia di DOI:10.1109/ICDAR.2015.7333797.
- Suthaharan, S., 2016, Support vector machine, *Machine Learning Models and Algorithms for Big Data Classification. Integrated Series in Information Systems*, [Online], Springer., hal. 207–235, tersedia di https://doi.org/10.1007/978-1-4899-7641-3_9.
- Tang, Y. dan Wu, X., 2018, Scene text detection using superpixel-based stroke feature transform and deep learning based region classification, *IEEE*

- Transactions on Multimedia*, [Online] 20 (9), 2276–2288, tersedia di DOI:10.1109/TMM.2018.2802644.
- Tian, C., Xia, Y., Zhang, X. dan Gao, X., 2017, Natural scene text detection with MC–MR candidate extraction and coarse-to-fine filtering, *Neurocomputing*, [Online] 260112–122, tersedia di DOI:10.1016/j.neucom.2017.03.078.
- Tian, S., Pan, Y., Huang, C., Lu, S., Yu, K. dan Tan, C.L., 2015, Text flow: A unified text detection system in natural scene images, *Proceedings of the IEEE International Conference on Computer Vision*, [Online], 2015 IEEE, Santiago., hal. 4651–4659, tersedia di DOI:10.1109/ICCV.2015.528.
- Tong, G., Dong, M., Sun, X. dan Song, Y., 2022, Natural scene text detection and recognition based on saturation-incorporated multi-channel MSER, *Knowledge-Based Systems*, [Online] 250109040, tersedia di DOI:10.1016/j.knosys.2022.109040.
- Turki, H., Ben Halima, M. dan Alimi, A.M., 2017, Text detection based on MSER and CNN features, *Proceedings of the International Conference on Document Analysis and Recognition, ICDAR*, [Online], 2017 IEEE, Kyoto., hal. 949–954, tersedia di DOI:10.1109/ICDAR.2017.159.
- Turki, H., Ben Halima, M. dan Alimi, A.M., 2016, Text detection in natural scene images using two masks filtering, *Proceedings of IEEE/ACS International Conference on Computer Systems and Applications, AICCSA*, [Online], 2016 IEEE., hal. 1–6, tersedia di DOI:10.1109/AICCSA.2016.7945644.
- Wolf, C. dan Jolion, J.M., 2006, Object count/area graphs for the evaluation of object detection and segmentation algorithms, *International Journal on Document Analysis and Recognition*, [Online] 8 (4), 280–296, tersedia di DOI:10.1007/s10032-006-0014-0.
- Wu, H., Zou, B., Zhao, Y. qian, Chen, Z., Zhu, C. dan Guo, J., 2016, Natural scene text detection by multi-scale adaptive color clustering and non-text filtering, *Neurocomputing*, [Online] 2141011–1025, tersedia di DOI:10.1016/j.neucom.2016.07.016.
- Yao, C., 2012, MSRA Text Detection 500 Database (MSRA-TD500), [Online], tersedia di [http://www.iapr-tc11.org/mediawiki/index.php/MSRA_Text_Detection_500_Database_\(MSRA-TD500\)](http://www.iapr-tc11.org/mediawiki/index.php/MSRA_Text_Detection_500_Database_(MSRA-TD500)).
- Yin, X.C., Pei, W.Y., Zhang, J. dan Hao, H.W., 2015, Multi-orientation scene text detection with adaptive clustering, *IEEE Transactions on Pattern Analysis and Machine Intelligence*, [Online] 37 (9), 1930–1937, tersedia di DOI:10.1109/TPAMI.2014.2388210.
- Yin, X.C., Yin, X., Huang, K. dan Hao, H., 2014, Robust text detection in natural scene images, *IEEE Transactions on Pattern Analysis and Machine Intelligence*, [Online] 36 (5), 970–983, tersedia di DOI:10.1109/TPAMI.2013.182.
- Zhang, X., Gao, X. dan Tian, C., 2018, Text detection in natural scene images based on color prior guided MSER, *Neurocomputing*, [Online] 30761–71, tersedia di DOI:10.1016/j.neucom.2018.03.070.
- Zhou, X., Yao, C., Wen, H., Wang, Y., Zhou, S., He, W. dan Liang, J., 2017, EAST: An efficient and accurate scene text detector, *Proceedings - 30th IEEE*



- Conference on Computer Vision and Pattern Recognition, CVPR 2017*, [Online], 2017 IEEE, Honolulu., hal. 2642–2651, tersedia di DOI:10.1109/CVPR.2017.283.
- Zhu, Y., Yao, C. dan Bai, X., 2016, Scene text detection and recognition: recent advances and future trends, *Frontiers of Computer Science*, [Online] 10 (1), 19–36, tersedia di DOI:10.1007/s11704-015-4488-0.
- Zuiderveld, K., 1994, *Contrast limited adaptive histogram equalization*, IV, Academic Press, Inc., England.