

DAFTAR PUSTAKA

- [1] Badan Statistik Nasional, “Ekspor Ikan Segar/Dingin Hasil Tangkap menurut Negara Tujuan Utama, 2012-2020,” 2021.
<https://www.bps.go.id/statictable/2019/02/25/2024/ekspor-ikan-segar-dingin-hasil-tangkap-menurut-negara-tujuan-utama-2012-2020.html>
(accessed Jan. 12, 2022).
- [2] N. Luthfiana, “SIARAN PERS KEMENTERIAN KELAUTAN DAN PERIKANAN NOMOR: SP.798/SJ.5/VIII/2021,” 2021.
<https://kkp.go.id/artikel/33049-trenggono-bawa-sektor-perikanan-tumbuh-9-69-persen-di-triwulan-kedua-2021> (accessed Apr. 01, 2022).
- [3] DIREKTORAT PENGELOLAAN SUMBER DAYA IKAN, “PENGELOLAAN PERIKANAN DENGAN PENDEKATAN EKOSISTEM (Ecosystem Approach to Fisheries Management - EAFM).”
<https://kkp.go.id/djpt/ditpsdi/page/5057-pengelolaan-perikanan-dengan-pendekatan-ekosistem>.
- [4] Mujiyanto and A. Ronny, “Karakteristik Habitat Ikan Kerapu Di Kepulauan Karimunjawa, Jawa Tengah the Characteristic Habitat of Grouper Fish in Karimunjawa Islands, Central Java,” *BAWAL Cilalawi*, vol. 7, no. 1, pp. 147–154, 2015.
- [5] D. M. Bessie and D. Ariyogagautama, *Penilaian Performa Pengelolaan Perikanan menggunakan Indikator EAFM Kajian pada perikanan di Wilayah Kabupaten Lembata*. 2012.
- [6] A. A. Sentosa and D. Wijaya, “Potensi invasif ikan zebra Cichlid (*Amatitlania nigrofasciata* Günther, 1867) di Danau Beratan, Bali ditinjau dari aspek biologinya,” *BAWAL Widya Ris. Perikan. Tangkap*, vol. 5, no. 2, pp. 113–121, 2013.
- [7] D. W. H. Tjahjo, S. E. Purnamaningtyas, and A. Suryandari, “Evaluasi Peran Jenis Ikan Dalam Pemanfaatan Sumber Daya Pakan Dan Ruang Di Waduk Ir. H. Djuanda, Jawa Barat,” *J. Penelit. Perikan. Indones.*, vol. 15, no. 4, p. 267, 2017, doi: 10.15578/jppi.15.4.2009.267-276.
- [8] D. J. Lee, J. K. Archibald, R. B. Schoenberger, A. W. Dennis, and D. K. Shiozawa, “Contour matching for fish species recognition and migration monitoring,” *Stud. Comput. Intell.*, vol. 122, no. 2008, pp. 183–207, 2008, doi: 10.1007/978-3-540-78534-7_8.
- [9] Y. X. Bai *et al.*, “Automatic multiple zebrafish tracking based on improved HOG features,” *Sci. Rep.*, vol. 8, no. 1, pp. 1–14, 2018, doi: 10.1038/s41598-018-29185-0.

- [10] S. Villon, M. Chaumont, G. Subsol, S. Villéger, T. Claverie, and D. Mouillot, "Coral Reef Fish Detection and Recognition in Underwater Videos by Supervised Machine Learning: Comparison Between Deep Learning and HOG+SVM Methods," in *Lecture Notes in Computer Science*, vol. 10016 LNCS, 2016, pp. 160–171.
- [11] G. Xu *et al.*, "Detection of Bluefin Tuna by Cascade Classifier and Deep Learning for Monitoring Fish Resources," *2020 Glob. Ocean. 2020 Singapore - U.S. Gulf Coast*, pp. 2020–2023, 2020, doi: 10.1109/IEEECONF38699.2020.9389012.
- [12] C. S. Arvind, R. Prajwal, P. N. Bhat, A. Sreedevi, and K. N. Prabhudeva, "Fish Detection and Tracking in Pisciculture Environment using Deep Instance Segmentation," *IEEE Reg. 10 Annu. Int. Conf. Proceedings/TENCON*, vol. 2019-Octob, pp. 778–783, 2019, doi: 10.1109/TENCON.2019.8929613.
- [13] X. Li, M. Shang, H. Qin, and L. Chen, "Fast accurate fish detection and recognition of underwater images with Fast R-CNN," *Ocean. 2015 - MTS/IEEE Washingt.*, pp. 1–5, 2016, doi: 10.23919/oceans.2015.7404464.
- [14] R. Mandal, R. M. Connolly, T. A. Schlacher, and B. Stantic, "Assessing fish abundance from underwater video using deep neural networks," *Proc. Int. Jt. Conf. Neural Networks*, vol. 2018-July, pp. 1–6, 2018, doi: 10.1109/IJCNN.2018.8489482.
- [15] K. U. Akdemir and E. Alaybeyoglu, "Classification of red mullet, bluefish and haddock caught in the black sea by 'single shot multibox detection,'" *2021 Int. Conf. Innov. Intell. Syst. Appl. INISTA 2021 - Proc.*, pp. 21–24, 2021, doi: 10.1109/INISTA52262.2021.9548488.
- [16] C. C. Wang, H. Samani, and C. Y. Yang, "Object Detection with Deep Learning for Underwater Environment," *Proc. 4th Int. Conf. Inf. Technol. Res. Bridg. Digit. Divid. Through Multidiscip. Res. ICITR 2019*, 2019, doi: 10.1109/ICITR49409.2019.9407797.
- [17] M. S. A. Bin Rosli, I. S. Isa, M. I. F. Maruzuki, S. N. Sulaiman, and I. Ahmad, "Underwater Animal Detection Using YOLOV4," *Proc. - 2021 11th IEEE Int. Conf. Control Syst. Comput. Eng. ICCSCE 2021*, no. August, pp. 158–163, 2021, doi: 10.1109/ICCSCE52189.2021.9530877.
- [18] W. Kong *et al.*, "Detection of golden crucian carp based on YOLOV5," in *2021 2nd International Conference on Artificial Intelligence and Education (ICAIE)*, Jun. 2021, pp. 283–286, doi: 10.1109/ICAIE53562.2021.00064.
- [19] T. Lin, P. Goyal, R. Girshick, K. He, and P. Dollar, "Focal Loss for Dense Object Detection," in *2017 IEEE International Conference on Computer*

- Vision (ICCV)*, Oct. 2017, pp. 2999–3007, doi: 10.1109/ICCV.2017.324.
- [20] S. Choi, “Fish identification in underwater video with deep convolutional neural network: SNUMedinfo at LifeCLEF fish task 2015,” *CEUR Workshop Proc.*, vol. 1391, pp. 1–5, 2015.
- [21] D. Rathi, S. Jain, and S. Indu, “Underwater Fish Species Classification using Convolutional Neural Network and Deep Learning,” *2017 9th Int. Conf. Adv. Pattern Recognition, ICAPR 2017*, pp. 344–349, 2018, doi: 10.1109/ICAPR.2017.8593044.
- [22] S. Cui, Y. Zhou, Y. Wang, and L. Zhai, “Fish Detection Using Deep Learning,” *Appl. Comput. Intell. Soft Comput.*, vol. 2020, 2020, doi: 10.1155/2020/3738108.
- [23] M. S. Cueto, J. M. B. Diangkinay, K. W. B. Melencion, T. P. Senerado, H. L. P. Taytay, and E. R. E. Tolentino, “Classification of different types of koi fish using convolutional neural network,” *Proc. - 5th Int. Conf. Intell. Comput. Control Syst. ICICCS 2021*, no. Iciccs, pp. 1135–1142, 2021, doi: 10.1109/ICICCS51141.2021.9432358.
- [24] Z. Shi *et al.*, “Detecting Organisms for Marine Video Surveillance,” in *Global Oceans 2020: Singapore – U.S. Gulf Coast*, Oct. 2020, pp. 1–7, doi: 10.1109/IEEECONF38699.2020.9389458.
- [25] P. Soviany and R. T. Ionescu, “Optimizing the Trade-off between Single-Stage and Two-Stage Object Detectors using Image Difficulty Prediction,” Mar. 2018, [Online]. Available: <http://arxiv.org/abs/1803.08707>.
- [26] S. M. Alkentar, B. Alsahwa, A. Assalem, and D. Karakolla, “Practical comparison of the accuracy and speed of YOLO, SSD and Faster RCNN for drone detection,” *J. Eng.*, vol. 27, no. 8, pp. 19–31, Aug. 2021, doi: 10.31026/j.eng.2021.08.02.
- [27] M. T. ZEREN, S. K. AYTULUN, and Y. KIRELLİ, “Comparison of SSD and Faster R-CNN Algorithms to Detect the Airports with Data Set Which Obtained From Unmanned Aerial Vehicles and Satellite Images,” *Eur. J. Sci. Technol.*, pp. 643–658, Aug. 2020, doi: 10.31590/ejosat.742789.
- [28] S. Nishant and M. Venkata, “Detection and Tracking of Humans in an Underwater Environment Using Deep Learning Algorithms,” Blekinge Institute of Technology, 2019.
- [29] S. Sena, “Pengenal Deep Learning Part 7 : Convolutional Neural Network (CNN).” <https://medium.com/@samuelsena/pengenal-deep-learning-part-7-convolutional-neural-network-cnn-b003b477dc94>.
- [30] W. Liu *et al.*, “SSD: Single shot multibox detector,” in *Lecture Notes in*

Computer Science, Dec. 2016, vol. 9905 LNCS, pp. 21–37, doi: 10.1007/978-3-319-46448-0_2.

- [31] K. Alderliesten, “YOLOv3 — Real-time object detection.” <https://medium.com/analytics-vidhya/yolov3-real-time-object-detection-54e69037b6d0>.
- [32] J. Redmon and A. Farhadi, “YOLOv3: An Incremental Improvement,” *Proc. 4th Int. Conf. Inf. Technol. Res. Bridg. Digit. Divid. Through Multidiscip. Res. ICITR 2019*, Apr. 2018, [Online]. Available: <http://arxiv.org/abs/1804.02767>.
- [33] A. Bochkovskiy, C. Wang, and H. M. Liao, “YOLOv4: Optimal Speed and Accuracy of Object Detection,” Apr. 2020, [Online]. Available: <http://arxiv.org/abs/2004.10934>.
- [34] G. Jocher, “YOLOv5.” <https://github.com/ultralytics/yolov5> (accessed Apr. 01, 2022).
- [35] R. Couturier, H. N. Noura, O. Salman, and A. Sider, “A Deep Learning Object Detection Method for an Efficient Clusters Initialization,” Apr. 2021, [Online]. Available: <http://arxiv.org/abs/2104.13634>.
- [36] V. Psiroukis, I. Malounas, N. Mylonas, K.-E. Grivakis, S. Fountas, and I. Hadjigeorgiou, “Monitoring of free-range rabbits using aerial thermal imaging,” *Smart Agric. Technol.*, vol. 1, p. 100002, Dec. 2021, doi: 10.1016/j.atech.2021.100002.
- [37] G. Jocher, “YOLOv5 Focus() Layer #3181.” <https://github.com/ultralytics/yolov5/discussions/3181> (accessed Apr. 01, 2022).
- [38] T.-Y. Lin *et al.*, “Microsoft COCO: Common Objects in Context,” May 2014, [Online]. Available: <http://arxiv.org/abs/1405.0312>.
- [39] K. E. Koech, “Confusion Matrix for Object Detection.” <https://towardsdatascience.com/confusion-matrix-and-object-detection-f0cbcb634157> (accessed Apr. 01, 2022).
- [40] S. McCann, “Average Precision.” <https://sanchom.wordpress.com/tag/average-precision> (accessed Apr. 01, 2022).
- [41] P. Dollar, C. Wojek, B. Schiele, and P. Perona, “Pedestrian Detection: An Evaluation of the State of the Art,” *IEEE Trans. Pattern Anal. Mach. Intell.*, vol. 34, no. 4, pp. 743–761, Apr. 2012, doi: 10.1109/TPAMI.2011.155.
- [42] “Frame Rate.” https://en.wikipedia.org/wiki/Frame_rate#How_many_frames_per_second_



can_the_human_eye_see.3F (accessed Jan. 01, 2022).

- [43] R. Liu, X. Fan, M. Zhu, M. Hou, and Z. Luo, “Real-world Underwater Enhancement: Challenges, Benchmarks, and Solutions under Natural Light,” *IEEE Trans. Circuits Syst. Video Technol.*, pp. 1–14, 2020, doi: 10.1109/TCSVT.2019.2963772.
- [44] WuZhe, “YOLOv5.” <https://github.com/ultralytics/yolov5/issues/6998> (accessed Nov. 01, 2021).