

DAFTAR PUSTAKA

- [1] Karnadi, A. 2022. “Jumlah Kecelakaan Lalu Lintas Meningkat Jadi 103.645 pada 2021”. <https://dataindonesia.id/sektor-riil/detail/jumlah-kecelakaan-lalu-lintas-meningkat-jadi-103645-pada-2021> diakses pada tanggal 10 September 2022.
- [2] Anonim. 2017. “Inilah Faktor Dominan Penyebab Kecelakaan Lalu Lintas saat Angleb 2017”. <http://www.perhubungan.jatengprov.go.id/read/inilah-faktor-dominan-penyebab-kecelakaan-lalu-lintas-saat-angleb-2017> diakses pada tanggal 10 September 2022.
- [3] Anonim. 2022. “2 Bahaya Mengantuk saat Mengemudi”. <https://auto2000.co.id/berita-dan-tips/bahaya-mengantuk-saat-mengemudi#> diakses pada tanggal 10 September 2022.
- [4] K., Radik, F. M., & Widowati, E. (2021). Lalu Lintas Jalan Tol Ruas Batang-Semarang Berdasarkan Karakteristik Faktor Penyebab Kecelakaan Tahun Indonesian Journal of Public Health and Nutrition Article Info. *IJPHN*, *1*(2), 214–222. <https://doi.org/10.15294/ijphn.v1i2.45050>
- [5] Arfan, I. (2018). STUDI EPIDEMIOLOGI KEJADIAN KECELAKAAN LALU LINTAS DI KOTA PONTIANAK. In *JVK* (Vol. 4, Issue 2). <http://ejournal.poltekkes-pontianak.ac.id/index.php/JVK>
- [6] Kuswara, R. 2013. “Aplikasi pendeteksi mata mengantuk berbasis citra digital menggunakan metode *haar classifier* secara *real rime*”. *Diploma thesis*, Universitas Komputer Indonesia. <http://elib.unikom.ac.id/gdl.php?mod=browse&op=rea...>
- [7] Wilkinson, V. E., Jackson, M. L., Westlake, J., Stevens, B., Barnes, M., Swann, P., Rajaratnam, S. M. W., & Howard, M. E. (2013). The accuracy of eyelid movement parameters for drowsiness detection. *Journal of Clinical Sleep Medicine*, *9*(12), 1315–1324. <https://doi.org/10.5664/jcsm.3278>
- [8] Imanuddin, et al. (2019). Deteksi Mata Mengantuk Pada Pengemudi Mobil Menggunakan Metode Viola Jones. *JOINTECS (Journal of Information Technology and Computer Science)*, *4*(2). <https://doi.org/10.31328/jo>
- [9] Chandrasena, H. M., & Wickramasinghe, D. M. J. (2016). Driver’s Drowsiness Detecting and Alarming System. *International Journal of Computer Science and Information Technology Research*, *4*, 127–139. www.researchpublish.com
- [10] Rozaq, A. 2019. “Artificial Intelligence untuk Pemula”. [E-book version]. UNIPMA Press. [http://eprint.unipma.ac.id/107/1/46.%20Artificial intelligent untuk pemula.PDF](http://eprint.unipma.ac.id/107/1/46.%20Artificial%20intelligent%20untuk%20pemula.PDF)
- [11] Wolfewicz, A. 2022. “Deep Learning vs Machine Learning – What’s The Difference?”. <https://levity.ai/blog/difference-machine-learning-deep-learning>. Diakses pada tanggal 10 September 2022.
- [12] Andriyani, W. 2020. “Korelasi antara Artificial Intelligence, Machine Learning dan Deep Learning”. <https://algorit.ma/blog/artificial-intelligence-deep-learning/>. Diakses pada tanggal 10 September 2022.
- [13] Setiawan, R. 2021. “Mengenal Deep Learning Lebih Jelas”. <https://www.dicoding.com/blog/mengenal-deep-learning/>. Diakses pada tanggal 10 September 2022.
- [14] Oliver, A. 2022. “Deep Learning: Definisi, Jenis, Contoh Penerapan, dan Manfaatnya”. <https://glints.com/id/lowongan/deep-learning-adalah/#.YwsuMHZBy00>. Diakses pada tanggal 10 September 2022.
- [15] Anonim. (Tanpa Tahun). “What is Deep Learning?”. <https://www.mathworks.com/discovery/deep->

- [learning.html#:~:text=Deep+learning+is+a+machine,a+pedestrian+from+a+lamppost.](#)
Diakses pada tanggal 10 September 2022.
- [16] Anonim. 2022. “What is Computer Vision?”. <https://www.ibm.com/topics/computer-vision>.
Diakses pada tanggal 11 September 2022.
- [17] Babich, N. 2020. “What is Computer Vision & How Does it Work? An Introduction”.
<https://xd.adobe.com/ideas/principles/emerging-technology/what-is-computer-vision-how-does-it-work/>.
Diakses pada tanggal 11 September 2022.
- [18] Kang, D.-Y., Duong, H. P., & Park, J.-C. (2020). Application of Deep Learning in Dentistry and Implantology. *The Korean Academy of Oral and Maxillofacial Implantology*, 24(3), 148–181. <https://doi.org/10.32542/implantology.202015>
- [19] Zou, Z., Chen, K., Shi, Z., Guo, Y., & Ye, J. (2019). *Object Detection in 20 Years: A Survey*.
<http://arxiv.org/abs/1905.05055>
- [20] Gao, H., Cheng, B., Wang, J., Li, K., Zhao, J., & Li, D. (2018). Object Classification Using CNN-Based Fusion of Vision and LIDAR in Autonomous Vehicle Environment. *IEEE Transactions on Industrial Informatics*, 14(9), 4224–4230.
<https://doi.org/10.1109/TII.2018.2822828>
- [21] Issa, R. bin, Das, M., Rahman, M. S., Barua, M., Rhaman, M. K., Ripon, K. S. N., & Alam, M. G. R. (2021). Double deep Q-learning and faster R-CNN-based autonomous vehicle navigation and obstacle avoidance in dynamic environment. *Sensors*, 21(4), 1–24.
<https://doi.org/10.3390/s21041468>
- [22] Amwin, A. 2021. “Deteksi dan Klasifikasi Kendaraan Berbasis Algoritma *You Only Look Once* (Yolo)”. Skripsi. Universitas Islam Indonesia.
<https://dspace.uui.ac.id/handle/123456789/34154>
- [23] Lohia, A., Dhananjay Kadam, K., Raghvendra Joshi, R., Bongale, A. M., Dhananjay, K., & Raghvendra, R. (2021). *Bibliometric Analysis of One-stage and Two-stage Object Detection*.
<https://digitalcommons.unl.edu/libphilprac>
- [24] Kemajou, V. N., Bao, A., & Germain, O. (2019). *OTC-29490-MS Wellbore Schematics to Structured Data Using Artificial Intelligence Tools*. <https://doi.org/10.4043/29490-MS>
- [25] Zhu, X., Lyu, S., Wang, X., & Zhao, Q. (2021). TPH-YOLOv5: Improved YOLOv5 Based on Transformer Prediction Head for Object Detection on Drone-captured Scenarios.
<http://arxiv.org/abs/2108.11539>
- [26] Thuan, D. 2021. “*Evolution of Yolo Algorithm and Yolov5: the State-of-the-Art Object Detection Algorithm*”. Thesis. Oulu University of Applied Sciences.
<https://urn.fi/URN:NBN:fi:amk-202103042892>
- [27] Leriensyah, M. (2020). “Deteksi dan Perhitungan Kendaraan untuk Mengetahui Arus Kepadatan Lalu Lintas secara Otomatis Menggunakan Yolo-V3”. Skripsi. Universitas Islam Indonesia.
- [28] Khatami, M., S. 2022. “Deteksi Kendaraan Menggunakan Algoritma *You Only Look Once* (YOLO) V3”. Skripsi. Universitas Islam Indonesia.
<https://dspace.uui.ac.id/bitstream/handle/123456789/38956/17523142.pdf?sequence=1>
- [29] Redmon, J., Divvala, S., Girshick, R., & Farhadi, A. (2016). “*You only look once: Unified, realtime object detection*”. *Proceedings of the IEEE Computer Society Conference on Computer Vision and Pattern Recognition*, 2016-Decem, 779–788.
<https://doi.org/10.1109/CVPR.2016.91>

- [30] Jiang, P., Ergu, D., Liu, F., Cai, Y., & Ma, B. (2022). A Review of Yolo Algorithm Developments. *Procedia Computer Science*, 199, 1066–1073. <https://doi.org/10.1016/j.procs.2022.01.135>.
- [31] Eslamiat, H. 2022. “Comparing YOLOv3, YOLOv4 and YOLOv5 for Autonomous Landing Spot Detection in Faulty UAV”. *mdpi*, pp. 1–15. doi: <https://doi.org/10.1016/j.procs.2022.01.135>.
- [32] Glenn. 2020. “GitHub - ultralytics/yolov5: YOLOv5 in PyTorch > ONNX > 74 CoreML > TFLite.” [Online]. <https://github.com/ultralytics/yolov5>.
- [33] Roboflow. (2022). ”Create Augmented Images”. <https://roboflow.com/>. Diakses pada tanggal 16 Oktober 2022.
- [34] Zain, F. H., & Santoso, H. (2021). Sistem Deteksi Kerusakan Gedung Menggunakan Algoritma YOU ONLY LOOK ONCE Dengan Unmanned Aero Vehicle. *Jurnal Politeknik Negeri Jakarta*. <https://repository.pnj.ac.id/id/eprint/179>
- [35] Google Colaboratory. (2022). <https://colab.research.google.com/?hl=id>. Diakses pada tanggal 16 Oktober 2022.
- [36] Adam, R. (2022). “Catat Eksperimen *Machine Learning* dengan *Weights and Biases*”. [https://structilmy.com/blog/2022/01/05/catat-eksperimen-machine-learning-dengan-weights-and-biases/#:~:text=Weights%20and%20Biases%20\(atau%20kadang,pada%20saat%20eksperimen%20dengan%20mudah](https://structilmy.com/blog/2022/01/05/catat-eksperimen-machine-learning-dengan-weights-and-biases/#:~:text=Weights%20and%20Biases%20(atau%20kadang,pada%20saat%20eksperimen%20dengan%20mudah). Diakses pada tanggal 17 Oktober 2022.
- [37] Liu, C. (2022). “More Performance Evaluation Metrics for Classification Problems You Should Know”. <https://www.kdnuggets.com/2020/04/performance-evaluation-metrics-classification.html>. Diakses pada tanggal 20 Oktober 2022.
- [38] Wilianto, K. (2022). “Evaluation Metrics pada *Computer Vision* dari Klasifikasi hingga Deteksi Objek”. <https://medium.com/data-folks-indonesia/evaluation-metrics-pada-computer-vision-dari-klasifikasi-hingga-deteksi-objek-5049d3fd90d2>. Diakses pada tanggal 20 Oktober 2022.
- [39] Afifah, L. (Tanpa Tahun). “Apa itu *Confusion Matrix*?”. <https://ilmudatapy.com/apa-itu-confusion-matrix/>. Diakses pada tanggal 20 Oktober 2022.
- [40] Padilla, R., Netto, S. L., & Da Silva, E. A. B. (2020). A Survey on Performance Metrics for Object-Detection Algorithms. *International Conference on Systems, Signals, and Image Processing, 2020-July*(July), 237–242. <https://doi.org/10.1109/IWSSIP48289.2020.9145130>
- [41] Buhl, N. (2023).”*F1-Score in Machine Learning*”. <https://encord.com/blog/f1-score-in-machine-learning/>. Diakses pada tanggal 16 Oktober 2023.
- [42] Kukil. (2022).”*Intersection Over Union (IoU) in Object Detection & Segmentation*”. <https://learnopencv.com/intersection-over-union-iou-in-object-detection-and-segmentation/>. Diakses pada tanggal 20 Oktober 2022.
- [43] Shah, T. (2017).”*About Train, Validation and Test Sets in Machine Learning*”. <https://towardsdatascience.com/train-validation-and-test-sets-72cb40c9e7>. Diakses pada tanggal 20 Oktober 2022.
- [44] Setiawan, A. (2021).”Augmentasi Data pada *Computer Vision*”. <https://medium.com/data-folks-indonesia/augmentasi-data-pada-computer-vision-45c5ebe10e8f>. Diakses pada tanggal 20 Oktober 2022.
- [45] Pittara. (2022).”Kantuk”. <https://www.alodokter.com/kantuk#:~:text=Kantuk%20atau%20'ngantuk'%20adalah%20ko>

- [ndisi,mengganggu%20aktivitas%20dan%20menurunkan%20produktivitas](#). Diakses pada tanggal 22 September 2022.
- [46] Halodoc. (2018). “*Microsleep*, Tidur Singkat yang Membahayakan Kesehatan”. <https://www.halodoc.com/artikel/microsleep-tidur-singkat-yang-membahayakan-kesehatan>. Diakses pada tanggal 22 September 2022.
- [47] Riadi, M. (2020). “Raspberry Pi (Definisi, Fungsi, Jenis, Spesifikasi, dan Pemrograman)”. <https://www.kajianpustaka.com/2020/12/Raspberry-Pi.html>. Diakses pada tanggal 21 Oktober 2022.
- [48] Isaac. (Tanpa Tahun). “GPIO: *all about Raspberry Pi 4 and 3 connections*”. https://www-hwlibre-com.translate.goog/id/gpio-raspberry-pi/?x_tr_sl=id&x_tr_tl=en&x_tr_hl=en&x_tr_pto=sc. Diakses pada tanggal 21 Oktober 2022.
- [49] Suprianto. 2015. “*Liquid Crystal Display (LCD) 16x2*”. <https://blog.unnes.ac.id/antosupri/liquid-crystal-display-lcd-16-x-2/>. Diakses pada tanggal 22 Oktober 2022.
- [50] Furqoni, R. (2020). “RANCANG BANGUN PEMANFAATAN SISTEM RFID UNTUK KEMUDAHAN LOGIN PEMBAYARAN”. *Diploma thesis*, STMIK AKAKOM Yogyakarta. <http://eprints.akakom.ac.id/id/eprint/8946>.
- [51] IDMETAFORA. 2023. “Mengenal Lebih Dalam Webcam: Pengertian, Sejarah, Jenis, Fungsi, Serta Cara Kerja”. <https://idmetafora.com/news/read/3356/Mengenal-Lebih-Dalam-Webcam-Pengertian-Sejarah-Jenis-Fungsi-Serta-Cara-Kerja.html>. Diakses pada tanggal 16 Oktober 2023.
- [52] Mustofa, I. C. (2019). Monitoring Gerakan Pada Ruangan Menggunakan Webcam Dan Motor Stepper. *Journal Teknik Informatika Universitas Islam Negeri*, 5(12), 51–60.
- [53] Wikielektronika. 2023. “Pengertian Adaptor, Fungsi, dan Cara Kerja”. <https://wikielektronika.com/adaptor-adalah/>. Diakses pada tanggal 16 Oktober 2023.
- [54] Wijaya, Y. K. (2015). Design And Implementation Of Bidirectional Buck Boost Dc-Dc Converter For Electric. *Institut Teknologi Sepuluh November*.
- [55] Suhinar, El. (2018). “Cara Kerja Relay, Komponen, dan Fungsinya”. <https://www.listrik-praktis.com/2018/05/cara-kerja-relay-komponen-dan-fungsinya.html>. Diakses pada tanggal 16 Oktober 2023.
- [56] Components101. (2020). “5V Single-Channel Relay Module”. <https://components101.com/switches/5v-single-channel-relay-module-pinout-features-applications-working-datasheet>. Diakses pada tanggal 16 Oktober 2023.
- [57] Kho, D. (2023). “Pengertian Piezoelectric Buzzer dan Cara Kerjanya”. <https://teknikelektronika.com/pengertian-piezoelectric-buzzer-cara-kerja-buzzer/>. Diakses pada tanggal 16 Oktober 2023.
- [58] F.-F. Li, R. Krishna, and D. Xu, “*Lecture 2: Image Classification A Core Task in Computer Vision.*”
- [59] Dwyer, B. (2020). “When Should I Auto-Orient My Images?”. <https://blog.roboflow.com/exif-auto-orientation/>. Diakses pada tanggal 22 Oktober 2022.
- [60] Roboflow. (2022). “Preprocess Images”. <https://docs.roboflow.com/datasets/image-preprocessing>. Diakses pada tanggal 16 Oktober 2022.
- Thakur, A. (2022). “What's the Optimal Batch Size to Train a Neural Network?”.
- [61] Thakur, A. (2022). “What's the Optimal Batch Size to Train a Neural Network?”. <https://wandb.ai/ayush-thakur/dl-question-bank/reports/What-s-the-Optimal-Batch-Size-to->

- [Train-a-Neural-Network---VmlldzoyMDkyNDU#:~:text=That%20said%2C%20note%20that%20for,to%20a%20lower%20batch%20size](#). Diakses pada tanggal 20 Oktober 2022.
- [62] Shah, D. (2023). “*Intersection over Union (IoU): Definition, Calculation, and Code*“. <https://www.v7labs.com/blog/intersection-over-union-guide>. Diakses pada tanggal 20 Desember 2023.
- [63] Mostafa, M., Sadi, S., Anamika, S. A., Hussain, M. S., & Khan, R. (2023). Automatic Vehicle Classification and Speed Tracking. *Proceedings of the 2nd International Conference on Applied Artificial Intelligence and Computing, ICAAIC 2023*, 972–977. <https://doi.org/10.1109/ICAAIC56838.2023.10140935>
- [64] Medium. (2021). “*Machine Learning Confidence Scores – All You Need to Know as a Conversation Designer*“. <https://medium.com/voice-tech-global/machine-learning-confidence-scores-all-you-need-to-know-as-a-conversation-designer-8babd39caae7#:~:text=What%20is%20a%20Confidence%20Score,of%20one%20or%20multiple%20predictions>. Diakses pada tanggal 20 Desember 2023.
- [65] Microsoft. (2023). “*The Confidence Score of an Answer*“. <https://learn.microsoft.com/en-us/azure/ai-services/qnamaker/concepts/confidence-score>. Diakses pada tanggal 20 Desember 2023.
- [66] Juhl, R., & Feng, E. (n.d.). Real-time Object Detection and Classification for ASL alphabet.
- [67] Mondin, A. (2023). “*YOLOv5(m): Implementation from Scratch with Pytorch*“. <https://pub.towardsai.net/yolov5-m-implementation-from-scratch-with-pytorch-c8f84a66c98b>. Diakses pada tanggal 22 Desember 2023.
- [68] Cherifi, I. (Tanpa Tahun). “*YOLOv5 Model Architecture [explained]*“. <https://iq.opengenus.org/yolov5/>. Diakses pada tanggal 22 Desember 2023.