

DAFTAR PUSTAKA

- [1] P. M. Inayah, R. A. R. Harahap, A. A. Barita, and R. B. Pulungan, “Survei Pasar Perancangan Tongkat Pintar untuk Tunanetra,” 2020.
- [2] R. P. Anggara and A. J. Taufiq, “Rancang Bangun Alat Bantu Mobilitas Tunanetra Dan Penentu Lokasi Menggunakan Global Positioning System Tracking Berbasis Internet Of Things,” 2021.
- [3] Yunita Eka Pratiwi, “Rancang Bangun Tongkat Pendeteksi Halangan Sebagai Alat Bantu Jalan Tunanetra Obstacle Detection Stick Design As A Road Assistance For The Blind.”
- [4] N. M. A. Nazri, S. S. M. Fauzi, R. A. J. M. Gining, T. R. Razak, and M. N. F. Jamaluddin, “Smart Cane for Visually Impaired with Obstacle, Water Detection and GPS,” *International Journal of Computing and Digital Systems*, vol. 10, no. 1, pp. 1–8, 2021.
- [5] E. Andriana, S. Riyanto, and S. Anardani, “Optimalisasi Tongkat Pintar Pendeteksi Lokasi Berbasis Internet Of Things Menggunakan Firebase Realtime Database”, [Online]. Available: www.arduino.cc
- [6] A. A. Rama, U. Binawan, and H. Trustisari, “Literatur Review : Aksesibilitas Pelayanan Fasilitas Publik Bagi Penyandang Disabilitas Tunanetra,” *Jurnal Multidisiplin Ilmu Akademik*, vol. 1, no. 3, pp. 659–668, 2024.
- [7] M. I. Rajabi, “Akses Penyandang Disabilitas Tunanetra di Dunia Kerja dalam Perspektif Hak Asasi Manusia,” *Jurnal Sains Student Research*, vol. 2, no. 4, pp. 320–331, 2024.
- [8] C. M. A. S. P. M. I. Sipriani, “Penyesuaian Diri Anak Tunanetra yang Mengalami Gangguan Kesehatan,” *Journal of Islamic Guidance and Conseling*, 2022.
- [9] N. May Christie and A. Info Abstrak, “Analisis Masalah Penggunaan Tongkat Pada Mahasiswa Tunanetra Dalam Melakukan Orientasi Dan Mobilitas Di Lingkungan Kampus,” *Nubin Smart Journal*, vol. 3, no. 2, p. 2023, 2023. Available: <https://ojs.nubinsmart.id/index.php/nsj>
- [10] B. D. University, “Perancangan Tongkat Pintar Sebagai Alat Bantu Jalan untuk Meningkatkan Kualitas Hidup Peyandang Tunanetra,” pp. 2–2, 2023.

- [11] D. E. Gbenga, A. I. Shani, and A. L. Adekunle, "Smart Walking Stick for Visually Impaired People Using Ultrasonic Sensors and Arduino," *International Journal of Engineering and Technology*, vol. 9, no. 5, pp. 3435–3447, Oct. 2017.
- [12] P. Panacara, M. Siregar, T. Taryo, B. Rakyat Indonesia Jl Jend Sudirman, and B. Hilir, "Rancang Bangun Piranti Penuntun Tongkat Pintar Untuk Penyandang Tunanetra Berbasis Mikrokontroler Arduino," 2021. [Online]. Available: <http://www.openjournal.unpam.ac.id/index.php/SNH>
- [13] N. Kristanti, S. Samsugi, A. Surahman, R. Fajar Pratama, and R. Ibrahim Adam, "Penerapan Sensor Ultrasonik Pada Kotak Sampah Otomatis Menggunakan Telegram dan Alarm Suara," *Jurnal Teknik dan Sistem Komputer (JTIKOM)*, vol. 3, no. 2, p. 2022.
- [14] N. Milati *et al.*, "Intelegent Stick For Blind (Instisblind) Inovasi Alat Bantu Mobilitas Pencegahan Kebisingan Hujan Untuk Meningkatkan Kemandirian Penyandang Tunanetra," *Jurnal Edukasi Elektro*, vol. 3, no. 1, 2019, [Online]. Available: <http://journal.uny.ac.id/index.php/jee/>
- [15] M. Sudharshan and E. Kirandeep Kaur, "Rechargeable Smart Cane using Arduino Nano." [Online]. Available: <https://ssrn.com/abstract=4937982>
- [16] Ms. S. T. mani, "Smart Cane With Obstacles Detection," *International Scientific Journal of Engineering and Management*, vol. 03, no. 03, pp. 1–9, Mar. 2024.
- [17] A. A. Cardona Mesa and R. D. Vasquez Salazar, "Mobility aids for visually impaired persons: Journals reviewed," *Wearable Technology*, vol. 2, no. 1, p. 73, Jun. 2022.
- [18] D. Papakyriakou and I. S. Barbounakis, "Benchmarking and Review of Raspberry Pi (RPi) 2B vs RPi 3B vs RPi 3B+ vs RPi 4B (8GB)," *Int J Comput Appl*, vol. 185, no. 3, pp. 37–52, Apr. 2023.
- [19] Simon. Monk, *Raspberry Pi Cookbook: Software and Hardware Problems and Solutions Paperback*. O'Reilly Media, 20230117.
- [20] I. D. Wicaksono, A. I. Gunawan, and B. S. B. Dewantara, "Karakterisasi dari Properti Larutan Garam dengan Range Finder Ultrasonik Menggunakan

- Metode Transformasi Fourier,” *Jurnal Rekayasa ElektriKa*, vol. 16, no. 2, Aug. 2020, doi: 10.17529/jre.v16i2.15371.
- [21] S. R. Shuvo, M. M. Rahman, A. Islam, and MD. A. Al Mamun, “A Sustainable Iot-Based Automatic Vehicle Accident Detection, And Location Identification System With Preventing System,” 2023.
- [22] R. Herawati, A. Nugroho, and D. E. Prastiwi, “Sistem Pendukung Keputusan Pemilihan Siswa Berprestasi Menggunakan Metode Weighted Product,” *Go Infotech: Jurnal Ilmiah STMIK AUB*, vol. 28, no. 2, pp. 111–120, Dec. 2022, doi: 10.36309/goi.v28i2.175.
- [23] I. Salamah, N. Nasron, and D. Azzahra, “Teknologi GPS NEO-6 Untuk Tracking Kapal Penumpang Secara Real Time dengan Fitur Tombol Emergency SOS,” *SMATIKA JURNAL*, vol. 12, no. 02, pp. 146–155, Dec. 2022, doi: 10.32664/smatika.v12i02.692.
- [24] R. Firdaus, “Perancangan Dan Implemetasi Sensor GPS Pada Sistem Navigasi Multirotor,” *Telekontran : Jurnal Ilmiah Telekomunikasi, Kendali dan Elektronika Terapan*, vol. 8, no. 1, pp. 30–41, Jun. 2020, doi: 10.34010/telekontran.v8i1.3069.
- [25] M. S. Gowthami, B. Sneka, R. Suganya, S. Swathi, and M. J. Udhaya, “International Journal Of Progressive Research In Engineering Management And Science (Ijprems) ‘Emergency Alert System With Gps And Gsm Integration For Real-Time Vehicle Accidents,’” 2024, doi: 10.58257/IJPREMS34122.
- [26] K. Azmi, S. Defit, and Sumijan, “Implementasi Convolutional Neural Network (CNN) Untuk Klasifikasi Batik Tanah Liat Sumatera Barat,” vol. 16, no. 1, p. 2023, 2023.
- [27] Q. Zhang, J. Xiao, C. Tian, J. Chun-Wei Lin, and S. Zhang, “A robust deformed convolutional neural network (CNN) for image denoising,” *CAAI Trans Intell Technol*, vol. 8, no. 2, pp. 331–342, Jun. 2023, doi: 10.1049/cit2.12110.
- [28] R. A. P. Anhar, “Perancangan dan Implementasi Self-Checkout System pada Toko Ritel menggunakan Convolutional Neural Network (CNN),” *ELKOMIKA: Jurnal Teknik Energi Elektrik, Teknik Telekomunikasi, &*

- Teknik Elektronika*, vol. 11, no. 2, p. 466, Apr. 2023, doi: 10.26760/elkomika.v11i2.466.
- [29] Z. Li, F. Liu, W. Yang, S. Peng, and J. Zhou, “A Survey of Convolutional Neural Networks: Analysis, Applications, and Prospects,” *IEEE Trans Neural Netw Learn Syst*, vol. 33, no. 12, pp. 6999–7019, Dec. 2022, doi: 10.1109/TNNLS.2021.3084827.
- [30] P. Adi Nugroho, I. Fenriana, and R. Arijanto, “Implementasi Deep Learning Menggunakan Convolutional Neural Network (Cnn) Pada Ekspresi Manusia,” *Jurnal Algor*, vol. 2, no. 1, 2020, [Online]. Available: <https://jurnal.buddhidharma.ac.id/index.php/algor/index>
- [31] G. Firgiawan, N. Lintang Seina, and P. Rosyani, “Implementasi Metode You Only Look Once (YOLO) untuk Pendeteksi Objek dengan Tools OpenCV,” 2024. [Online]. Available: <https://jurnalmahasiswa.com/index.php/aidanspk>
- [32] Z. S. Jannah and F. A. Sutanto, “Implementasi Algoritma YOLO (You Only Look Once) Untuk Deteksi Rias Adat Nusantara,” *Jurnal Ilmiah Universitas Batanghari Jambi*, vol. 22, no. 3, p. 1490, Oct. 2022, doi: 10.33087/jiubj.v22i3.2421.
- [33] D. Nafis Alfarizi, R. Agung Pangestu, D. Aditya, M. Adi Setiawan, and P. Rosyani, “Penggunaan Metode YOLO Pada Deteksi Objek: Sebuah Tinjauan Literatur Sistematis,” 2023. [Online]. Available: <https://jurnalmahasiswa.com/index.php/aidanspk>
- [34] P. Jiang, D. Ergu, F. Liu, Y. Cai, and B. Ma, “A Review of Yolo Algorithm Developments,” in *Procedia Computer Science*, Elsevier B.V., 2021, pp. 1066–1073. doi: 10.1016/j.procs.2022.01.135.
- [35] E. Poerwandono *et al.*, “Implementasi Algoritma You Only Look Once (YOLOv8) untuk Mendeteksi Pelanggaran Lalu Lintas Berupa Tidak Menggunakan Helm (Studi Kasus di Jatiasih, Bekasi),” 2024. [Online]. Available: <https://journal.stmiki.ac.id>
- [36] Q. Aini, N. Lutfiani, H. Kusumah, and M. S. Zahran, “Deteksi Dan Pengenalan Objek Dengan Model Machine Learning: Model Yolo,” 2021.

- [37] D. M. Priya, "The Classification And The Prediction Of Heart Disease Using The Proposed Yolo Tiny Architecture," *J Theor Appl Inf Technol*, vol. 102, no. 18, 2024, [Online]. Available: <https://www.kaggle.com/datasets/johnsmith88/he>
- [38] P. Y. Putra *et al.*, "JIP (Jurnal Informatika Polinema) Deteksi Kendaraan Truk Pada Video Menggunakan Metode Tiny-Yolo V4," 2023.
- [39] A. D. Yakut, "Internet of Things for Individuals with Disabilities," in *Industry 4.0 and Global Businesses*, E. Yakut, Ed., Emerald Publishing Limited, 2022, pp. 137–152. doi: 10.1108/978-1-80117-326-120211010.
- [40] M. J. Baucas, P. Spachos, and S. Gregori, "Internet-of-Things Devices and Assistive Technologies for Health Care: Applications, Challenges, and Opportunities," *IEEE Signal Process Mag*, vol. 38, no. 4, pp. 65–77, 2021, doi: 10.1109/MSP.2021.3075929.
- [41] P. Kramomthong, C. Pintavirooj, and M. P. Paing, "Smart Cane for Assisting Visually Impaired People and the Blind," in *2021 13th Biomedical Engineering International Conference (BMEiCON)*, 2021, pp. 1–5. doi: 10.1109/BMEiCON53485.2021.9745212.
- [42] M. J. Baucas, P. Spachos, and S. Gregori, "Internet-of-Things Devices and Assistive Technologies for Health Care: Applications, Challenges, and Opportunities," *IEEE Signal Process Mag*, vol. 38, no. 4, pp. 65–77, 2021, doi: 10.1109/MSP.2021.3075929.
- [43] S. Subbiah, S. Ramya, G. P. Krishna, and S. Nayagam, "Smart Cane For Visually Impaired Based On IOT," in *2019 3rd International Conference on Computing and Communications Technologies (ICCCT)*, 2019, pp. 50–53. doi: 10.1109/ICCCT2.2019.8824893.
- [44] P. Wahib, A. Tunggal Narotama, N. Muhamad Rijki, M. Firdaus Fitrananda, and P. Rosyani, "Systematic Literature Review: Sistem Deteksi Penggunaan Masker Menggunakan Algoritma YOLO," *Jurnal Artificial Inteligent dan Sistem Penunjang Keputusan*, vol. 1, no. 1, 2023, [Online]. Available: <https://jurnalmahasiswa.com/index.php/aidanspk>
- [45] R. Moh Yusup, A. Faris Anugrah, D. Desmonda Muslimah, S. Mentari Widya Ningrum Permana, S. Yuliani, and U. Majalengka,

- “PENDETEKSIAN OBJEK MENGGUNAKAN OPENCV DAN METODE YOLOv4-TINY UNTUK MEMBANTU TUNANETRA,” *Hal. 59 Journal of Computer Science and Information Technology (JCSIT)*, vol. 1.
- [46] R. Girshick, “Fast R-CNN,” Apr. 2015, [Online]. Available: <http://arxiv.org/abs/1504.08083>
- [47] R. Muwardi, J. Mada, R. Permana, H. Gao, and M. Yunita, “Human Object Detection for Real-Time Camera using Mobilenet-SSD,” *Journal of Integrated and Advanced Engineering (JIAE)*, vol. 3, no. 2, pp. 141–150, 2023, doi: 10.5162/jiae.v3i2.108.
- [48] O. Bouazizi, C. Azroumahli, A. El Mourabit, and M. Oussouaddi, “Road Object Detection using SSD-MobileNet Algorithm: Case Study for Real-Time ADAS Applications,” *Journal of Robotics and Control (JRC)*, vol. 5, no. 2, pp. 551–560, 2024, doi: 10.18196/jrc.v5i2.21145.
- [49] D. Fhadeli, T. Elektro, and P. N. Sriwijaya, “Journal Of Applied Smart Electrical Network And Systems (Jasens) Alat Sistem Pendeteksi Area Blind Spot Dengan Prototype Kendaraan Dump Truck,” vol. 5, no. 1, pp. 29–35, 2024, [Online]. Available: <http://journal.isas.or.id/index.php/JASENS>
- [50] R. W. Pradana, G. Febriyani Pratiwi, and T. N. Arifin, “Rancang Bangun Sistem Pemantau Ketinggian Air Otomatis Menggunakan Sensor Ultrasonik (Hc-Sr04) Berbasis Arduino Uno Dengan Antarmuka Komputer Berbasis Microsoft Visual Basic 6.0,” *JTS*, vol. 3, no. 1, 2024.
- [51] J. B. Parera and A. H. J. Ontowirjo, “The Use Of The Internet Of Things On Early Detection Of Potential Tsunami,” 2023.
- [52] S. Solikh, A. Muzakhim Imammudin, and A. E. Rakhmania, “Design and Development of Assistive Canes for the Blind Based on IoT-Integrated Fuzzy Logic Using LiDAR Sensor Time of Flight VL53L1X,” *Journal of Telecommunication Network*, vol. 14, no. 1, 2024.
- [53] T. Ade Mulyanto, M. Habiby, and R. Adam, “Home Automation System Dengan Menggunakan Raspberry Pi 4,” 2021.
- [54] I. I. Setiawan, A. Jaenul, and D. Priyokusumo, “P-75 Prototipe Sistem Keamanan Rumah Menggunakan Face Recognition Berbasis Raspberry Pi

4 Prototype Of Home Security System Using Face Recognition Based On Raspberry Pi 4.”

- [55] R. Empat and M. Yolov5, “Deteksi Kantuk Berbasis Jetson Nano Bagi Pengemudi.”
- [56] P. G, S. M, K. S, and S. P, “Smart Cane for Blind People using Raspberry PI and Arduino,” *International Journal of Recent Technology and Engineering (IJRTE)*, vol. 9, pp. 1520–1522, May 2020, doi: 10.35940/ijrte.A2498.059120.
- [57] A. Gad *et al.*, *Safer Navigation: The AI-Powered Smart Cane for the Visually Impaired*. 2024. doi: 10.1109/DeSE60595.2023.10469180.
- [58] H. Abuelmakarem, A. Abuelhaag, M. Raafat, and S. Ayman, “An Integrated IoT Smart Cane for the Blind and Visually Impaired Individuals,” *SVU-International Journal of Engineering Sciences and Applications*, vol. 5, no. 1, pp. 71–78, Jun. 2024, doi: 10.21608/svusrc.2023.222096.1137.
- [59] M. Pawaskar, “YoloV4 Based Object Detection for Blind Stick,” 2023. [Online]. Available: www.ijisrt.com
- [60] G. Kokare, N. Mukhopadhyay, G. Chavan, S. Dhimate, M. Sole, and K. Kundu, “PathBuddy: An IoT-based Smart Cane for Visually Impaired People,” vol. 13, no. 7, p. 13128, 2024, doi: 10.15680/IJIRSET.2024.1307074.
- [61] “BassiraGuid : An integrated Navigation Aid System for Visually Impaired Individuals.” [Online]. Available: <https://ssrn.com/abstract=5152160>
- [62] M. Husin Pembimbing Utama, H. Tommy Bustomi, Mk. Pembimbing Pendamping, and S. Lailiyah, “Pemanfaatan Teknologi Global Positioning System (Gps) Pada Implementasi Monitoring Pengangkutan Sampah Di Desa Loa Duri Ilir Berbasis Web,” 2021. [Online]. Available: <https://kbbi.kemdikbud.go.id/entri/teknologi>,
- [63] S. Sant, M. Salunkhe, K. Shah, G. Kumawat, and Prof. M. Palinje, “Smart Cane: A Machine Learning-Powered Assistive Device,” *Int J Res Appl Sci Eng Technol*, vol. 11, no. 4, pp. 3815–3822, Apr. 2023, doi: 10.22214/ijraset.2023.51090.

- [64] I. S. Walingkas, M. E. I. Najooan, and B. A. Sugiarso, “Perpaduan Sensor Ultrasonik Dengan Mini Computer Raspberry Pi Sebagai Pemandu Robot Beroda,” 2019.
- [65] S. Swarup, E. M. Shakshuki, and A. Yasar, “Task Scheduling in Cloud Using Deep Reinforcement Learning,” *Procedia Comput Sci*, vol. 184, pp. 42–51, 2021, doi: <https://doi.org/10.1016/j.procs.2021.03.016>.
- [66] S. Nugroho and A. Widiyanto, “Designing parallel computing using raspberry pi clusters for IoT servers on apache Hadoop,” *J Phys Conf Ser*, vol. 1517, p. 012070, Apr. 2020, doi: 10.1088/1742-6596/1517/1/012070.
- [67] M. Khan, M. A. Raza, G. Abbas, S. Othmen, A. Yousef, and T. A. Jumani, “Pothole detection for autonomous vehicles using deep learning: a robust and efficient solution,” *Front Built Environ*, vol. Volume 9-2023, 2024, doi: 10.3389/fbuil.2023.1323792.
- [68] E. arif and I. Paulina Soko, “The Evaluation of web-based and android face-to-face tutorial applications quality using the user acceptance testing (UAT) method,” *Journal of World Science*, vol. 1, no. 8, pp. 590–595, Aug. 2022, doi: 10.58344/jws.v1i8.76.
- [69] K. Hosny, A. Salah, and A. Magdi, “Parallel Image Processing Applications Using Raspberry Pi,” 2023, pp. 107–119. doi: 10.1007/978-3-031-18735-3_6.
- [70] A. R. Adha, M. A. Musthofa, G. A. A. R. Putra, I. Harjanto, and J. Elektro, “ANALISIS KINERJA SENSOR ULTRASONIK HC-SR04 DENGAN AKURASI TINGGI DAN ERROR RENDAH,” *Science And Engineering National Seminar*, vol. 9, no. 9, 2024.
- [71] Mochammad Enrique Lazuardi Ramadany, Dyiono Dyiono, N. R. Yusrilfa Trisyayanti, and A. Sucipto, “Deteksi Objek Tingkat Pintar Menggunakan YOLOv5 Berbasis Odroid,” *JURNAL ILMIAH RESEARCH AND DEVELOPMENT STUDENT*, vol. 3, no. 1, pp. 256–265, Jan. 2025, doi: 10.59024/jis.v3i1.1136.
- [72] E. Andriana, S. Riyanto, and S. Anardani, “Optimalisasi Tingkat Pintar Pendeteksi Lokasi Berbasis Internet Of Things Menggunakan Firebase Realtime Database,” 2021, [Online]. Available: www.arduino.cc

- [73] T. Talaei Khoei, H. Ould Slimane, and N. Kaabouch, “Deep learning: systematic review, models, challenges, and research directions,” Nov. 01, 2023, *Springer Science and Business Media Deutschland GmbH*. doi: 10.1007/s00521-023-08957-4.
- [74] M. Avin Annabil *et al.*, “Analisis Pengukuran Jarak Objek Dengan Sensor Ultrasonik(Hc-Sr04) Untuk Berbagai Bentuk Objek AFILIASI.” [Online]. Available: <https://journal.unej.ac.id/JEI>