

DAFTAR PUSTAKA

- [1] T. G. Hailu, X. Guo, H. Si, L. Li, dan Y. Zhang, “Theories and Methods for Indoor Positioning Systems: A Comparative Analysis, Challenges, and Prospective Measures,” *Sensors*, vol. 24, Okt 2024, doi: 10.3390/s24216876.
- [2] M. Kjærgaard, H. Blunck, T. Godsk, T. Toftkjær, D. Christensen, dan K. Grønbæk, “Indoor Positioning Using GPS Revisited,” hlm. 38–56, Mei 2010, doi: 10.1007/978-3-642-12654-3_3.
- [3] P. Cherntanomwong dan D. J. Suroso, “Indoor localization system using wireless sensor networks for stationary and moving target,” dalam *2011 8th International Conference on Information, Communications & Signal Processing*, Singapore: IEEE, Des 2011, hlm. 1–5. doi: 10.1109/ICICS.2011.6173554.
- [4] D. J. Suroso, F. Y. M. Adiyatma, dan P. Cherntanomwong, “Wi-Fi Sensing for Indoor Localization via Channel State Information: A Survey,” *ELKHA*, vol. 15, no. 2, hlm. 152, Okt 2023, doi: 10.26418/elkha.v15i2.70830.
- [5] D. Mendez, M. Zennaro, M. Altayeb, dan P. Manzoni, “On TinyML WiFi Fingerprinting-Based Indoor Localization: Comparing RSSI vs. CSI Utilization,” dalam *2024 IEEE 21st Consumer Communications & Networking Conference (CCNC)*, Las Vegas, NV, USA: IEEE, Jan 2024, hlm. 1–6. doi: 10.1109/CCNC51664.2024.10454828.
- [6] Z. Jiang *dkk.*, “Eliminating the Barriers: Demystifying Wi-Fi Baseband Design and Introducing the PicoScenes Wi-Fi Sensing Platform,” *IEEE Internet Things J.*, vol. 9, no. 6, hlm. 4476–4496, Mar 2022, doi: 10.1109/JIOT.2021.3104666.
- [7] S. Liu *dkk.*, “Development of indoor positioning system based on Bluetooth,” dalam *2021 WRC Symposium on Advanced Robotics and Automation (WRC SARA)*, Beijing, China: IEEE, Sep 2021, hlm. 30–35. doi: 10.1109/WRC SARA53879.2021.9612702.
- [8] D. R. Philips, E. Salami, H. Ramiah, dan J. Kanesan, “Location Accuracy Optimization in Bluetooth Low Energy (BLE) 5.1-Based Indoor Positioning System (IPS)—A Machine Learning Approach,” *IEEE Access*, vol. 11, hlm. 140186–140201, 2023, doi: 10.1109/ACCESS.2023.3338358.
- [9] L. Chamari, E. Petrova, dan P. Pauwels, “An End-to-End Implementation of a Service-Oriented Architecture for Data-Driven Smart Buildings,” *IEEE Access*, vol. 11, hlm. 117261–117281, 2023, doi: 10.1109/ACCESS.2023.3325767.
- [10] E. J. Sacoto-Cabrera, D. Sarumeño-Ávila, A. Cuji-Torres, dan C. Salamea-Palacios, “Enhancing Urban Water Management: A Novel LoraWAN Platform Based on ChirpStack Integration with Node-Red for Efficient Data Hosting on the Google Cloud Platform,” dalam *2024 IEEE Colombian Conference on Communications and Computing (COLCOM)*, Barranquilla, Colombia: IEEE, Agu 2024, hlm. 1–6. doi: 10.1109/COLCOM62950.2024.10720258.
- [11] Z. Yang, Z. Zhou, dan Y. Liu, “From RSSI to CSI: Indoor localization via channel response,” *ACM Comput. Surv.*, vol. 46, no. 2, hlm. 1–32, Nov 2013, doi: 10.1145/2543581.2543592.



- [12] W. Xue, W. Qiu, X. Hua, dan K. Yu, "Improved Wi-Fi RSSI Measurement for Indoor Localization," *IEEE Sens. J.*, vol. 17, hlm. 2224–2230, Apr 2017, doi: 10.1109/JSEN.2017.2660522.
- [13] Y.-G. Zhang, "Analysis of Distance Measurement Based on RSSI," *Chin. J. Sens. Actuators*, Jan 2007, [Daring]. Tersedia pada: <https://consensus.app/papers/analysis-of-distance-measurement-based-on-rssi-zhang/a6d46f1bec2a5f339b85f994e80d0132/>
- [14] A. A. Sohan, M. Ali, F. Fairouz, A. I. Rahman, A. Chakrabarty, dan M. R. Kabir, "Indoor Positioning Techniques using RSSI from Wireless Devices," *2019 22nd Int. Conf. Comput. Inf. Technol. ICCIT*, hlm. 1–6, Des 2019, doi: 10.1109/ICCIT48885.2019.9038591.
- [15] J. Yan, C. Tiberius, dan G. Janssen, "Review of range-based positioning algorithms," *IEEE Aerosp. Electron. Syst. Mag.*, vol. 28, hlm. 2–27, Agu 2013, doi: 10.1109/MAES.2013.6575420.
- [16] F. Khan dan S. Nguang, "Distributed localization algorithm for wireless sensor networks using range lookup and subregion stitching," *IET Wirel. Sens. Syst.*, vol. 11, Mar 2021, doi: 10.1049/wss2.12020.
- [17] B. Madagouda dan R. Sumathi, "Range Based Localization using Least Square Method in WSN," *2022 10th Int. Conf. Emerg. Trends Eng. Technol. - Signal Inf. Process. ICETET-SIP-22*, hlm. 1–4, Apr 2022, doi: 10.1109/ICETET-SIP-2254415.2022.9791708.
- [18] M. B. Khalilsarai, B. Gross, S. Stefanatos, G. Wunder, dan G. Caire, "WiFi-Based Channel Impulse Response Estimation and Localization via Multi-Band Splicing," 20 November 2020, *arXiv*: arXiv:2011.10402. doi: 10.48550/arXiv.2011.10402.
- [19] S. B. Altaf Khattak, Fawad, M. M. Nasralla, M. A. Esmail, H. Mostafa, dan M. Jia, "WLAN RSS-Based Fingerprinting for Indoor Localization: A Machine Learning Inspired Bag-of-Features Approach," *Sensors*, vol. 22, no. 14, 2022, doi: 10.3390/s22145236.
- [20] D. J. Suroso, F. Y. M. Adiyatma, P. Cherntanomwong, dan P. Sooraksa, "Fingerprint Database Enhancement by Applying Interpolation and Regression Techniques for IoT-based Indoor Localization," *Emerg. Sci. J.*, vol. 4, hlm. 167–189, Jan 2022, doi: 10.28991/esj-2021-SP1-012.
- [21] M. T. Hoang *dkk.*, "A Soft Range Limited K-Nearest Neighbors Algorithm for Indoor Localization Enhancement," *IEEE Sens. J.*, vol. 18, hlm. 10208–10216, Des 2018, doi: 10.1109/JSEN.2018.2874453.
- [22] S. Xu, C.-C. Chen, Y. Wu, X. Wang, dan F. Wei, "Adaptive Residual Weighted K-Nearest Neighbor Fingerprint Positioning Algorithm Based on Visible Light Communication," *Sensors*, vol. 20, Agu 2020, doi: 10.3390/s20164432.
- [23] R. Kulesza, M. F. De Sousa, M. L. M. De Araújo, C. Araujo, dan A. Filho, "Evolution of Web Systems Architectures: A Roadmap," hlm. 3–21, Jan 2020, doi: 10.1007/978-3-030-35102-1_1.
- [24] G. Alonso, N. Ailamaki, S. Krishnamurthy, S. Madden, S. Sivasubramanian, dan R. Ramakrishnan, "Future of Database System



- Architectures,” *Companion 2023 Int. Conf. Manag. Data*, Jun 2023, doi: 10.1145/3555041.3589360.
- [25] P. Sen dan N. Mukherjee, “An ontology-based approach to designing a NoSQL database for semi-structured and unstructured health data,” *Clust. Comput.*, hlm. 1–18, Apr 2023, doi: 10.1007/s10586-023-03995-y.
- [26] B. Luo, A. Roy, K. Raj, T. Kumar, Z. Cheng, dan W. Khan, “SQL and NoSQL Database Software Architecture Performance Analysis and Assessments - A Systematic Literature Review,” *Big Data Cogn Comput*, vol. 7, hlm. 97, Mei 2023, doi: 10.3390/bdcc7020097.
- [27] M. T. Samarta, A. A. S. Gunawan, dan M. Syahputra, “Systematic Literature Review and Comparative Performance Analysis of SQL and NoSQL Databases in Big Data Applications,” *2024 Int. Conf. Inform. Multimed. Cyber Inf. Syst. ICIMCIS*, hlm. 218–222, Nov 2024, doi: 10.1109/ICIMCIS63449.2024.10957463.
- [28] N. Nishat, A. Uzzaman, M. M. I. Jim, dan J. Nahar, “OPTIMIZING SQL DATABASES FORBIG DATA WORKLOADS: TECHNIQUES AND BEST PRACTICES,” *Acad. J. Bus. Adm. Innov. Sustain.*, Jun 2024, doi: 10.69593/ajbais.v4i3.78.
- [29] K. Srinath, “Python – The Fastest Growing Programming Language,” 2017, [Daring]. Tersedia pada: <https://consensus.app/papers/python-%E2%80%93-the-fastest-growing-programming-language-srinath/4cd301f072b453e8a60678f090c26813/>
- [30] S. Peta, “Python- An Appetite for the Software Industry,” *Int. J. Program. Lang. Appl.*, Okt 2022, doi: 10.5121/ijpla.2022.12401.
- [31] F. Zehra, H. Javed, D. Khan, dan M. Pasha, “Comparative Analysis of C++ and Python in Terms of Memory and Time,” Des 2020, doi: 10.20944/preprints202012.0516.v1.
- [32] M. N. A. Quirante, E. M. Sumagang, dan D. R. Lincopinis, “Go Programming Language: Overview”.
- [33] J. Newmarch, “Overview of the Go Language,” dalam *Network Programming with Go: Essential Skills for Using and Securing Networks*, J. Newmarch, Ed., Berkeley, CA: Apress, 2017, hlm. 21–27. doi: 10.1007/978-1-4842-2692-6_2.
- [34] P. Dymora dan A. Paszkiewicz, “Performance Analysis of Selected Programming Languages in the Context of Supporting Decision-Making Processes for Industry 4.0,” *Appl. Sci.*, Nov 2020, doi: 10.3390/app10238521.
- [35] F. Andonov, “Comparative analysis of PYTHON with other programming languages,” *Yearb. Telecommun.*, Sep 2019, doi: 10.33919/ytelecomm.19.6.1.
- [36] A. Nabiil, B. H. Makmur, R. W. Wijaya, A. A. S. Gunawan, dan I. Edbert, “Performance Analysis on Web Development Programming Language (Javascript, Golang, PHP),” *2023 Int. Conf. Inf. Technol. Comput. ICITCOM*, hlm. 6–11, Des 2023, doi: 10.1109/ICITCOM60176.2023.10442358.
- [37] R. M. Filho, R. Bonfim, L. Pessoa, R. Barreto, dan R. De Freitas, “Measuring the Execution Time of Programs from different Android Embedded Programming Languages,” *2024 Lat. Am. Comput. Conf. CLEI*, hlm. 1–9, Agu 2024, doi: 10.1109/CLEI64178.2024.10700295.



- [38] R. Y. Kasenda, J. O. Tenda, E. W. R. Iman, J. A. M. Manantung, Z. J. S. Moekari, dan M. C. Pantas, “The Role and Evolution of Frontend Developers in the Software Development Industry,” *J. Syntax Admiration*, vol. 5, no. 11, hlm. 5191–5196, Des 2024, doi: 10.46799/jsa.v5i11.1852.
- [39] M. Kalske, N. Mäkitalo, dan T. Mikkonen, “Challenges When Moving from Monolith to Microservice Architecture,” dalam *Current Trends in Web Engineering*, I. Garrigós dan M. Wimmer, Ed., Cham: Springer International Publishing, 2018, hlm. 32–47.
- [40] R. Su dan X. Li, “Modular Monolith: Is This the Trend in Software Architecture?,” dalam *Proceedings of the 1st International Workshop on New Trends in Software Architecture*, Lisbon Portugal: ACM, Apr 2024, hlm. 10–13. doi: 10.1145/3643657.3643911.
- [41] M. Fowler dan J. Lewis, *Microservices*. Martin Fowler, 2017.
- [42] G. Blinowski, A. Ojdowska, dan A. Przybylek, “Monolithic vs. Microservice Architecture: A Performance and Scalability Evaluation,” *IEEE Access*, vol. 10, hlm. 20357–20374, 2022, doi: 10.1109/ACCESS.2022.3152803.
- [43] “Figma: The Collaborative Interface Design Tool,” Figma. Diakses: 11 Juli 2025. [Daring]. Tersedia pada: <https://www.figma.com/>
- [44] R. Jain, V. Shrivastava, A. Pandey, dan A. Sharma, “Modern Web Development using CSS & HTML,” *Int. J. Emerg. Sci. Eng.*, Mei 2024, doi: 10.35940/ijese.g2574.12060524.
- [45] G. Bierman, M. Abadi, dan M. Torgersen, “Understanding TypeScript,” hlm. 257–281, Agu 2014, doi: 10.1007/978-3-662-44202-9_11.
- [46] P. Japikse, K. Grossnicklaus, dan B. Dewey, “Introduction to TypeScript,” *Build. Web Appl. NET Core 21 JavaScript*, Des 2019, doi: 10.1007/978-1-4842-2478-6_7.
- [47] N. Ekker, “File & Object Storage For Dummies,” 2016.
- [48] Redis, “Why your caching strategies might be holding you back (and what to consider next),” Redis. Diakses: 16 Juli 2025. [Daring]. Tersedia pada: <https://redis.io/>
- [49] E. Gamess, T. Ford, dan M. Trifas, “Performance evaluation of a widely used implementation of the MQTT protocol with large payloads in normal operation and under a DoS attack,” *Proc. 2021 ACM Southeast Conf.*, Apr 2021, doi: 10.1145/3409334.3452067.
- [50] D. Happ, N. Karowski, T. Menzel, V. Handziski, dan A. Wolisz, “Meeting IoT platform requirements with open pub/sub solutions,” *Ann. Telecommun.*, vol. 72, hlm. 41–52, Jul 2016, doi: 10.1007/s12243-016-0537-4.
- [51] “AMQP 0-9-1 Model Explained | RabbitMQ.” Diakses: 16 Juli 2025. [Daring]. Tersedia pada: <https://www.rabbitmq.com/tutorials/amqp-concepts>
- [52] Venkat Marella, “Comparative Analysis of Container Orchestration Platforms: Kubernetes vs. Docker Swarm,” *Int. J. Sci. Res. Sci. Technol.*, vol. 11, no. 5, hlm. 526–543, Okt 2024, doi: 10.32628/IJSRST24105254.
- [53] “What Is Container Orchestration? | IBM.” Diakses: 2 Juni 2025. [Daring]. Tersedia pada: <https://www.ibm.com/think/topics/container-orchestration>



- [54] “Container Orchestration: A Beginner’s Guide,” Splunk. Diakses: 2 Juni 2025. [Daring]. Tersedia pada: https://www.splunk.com/en_us/blog/learn/container-orchestration.html
- [55] D. Merkel, “Docker: lightweight Linux containers for consistent development and deployment,” *Linux J*, vol. 2014, no. 239, hlm. 2:2, Mar 2014.
- [56] “Website performance: What is it? Why is it so important? And how do I measure it? - Contentsquare.” Diakses: 2 Juni 2025. [Daring]. Tersedia pada: <https://contentsquare.com/blog/website-performance/>
- [57] A. A. I. Al Dulaimi dan S. M. Mohi-aldeen AL-Mashhadany, “Websites Performance Evaluation Based on Software Engineering Metrics of Multi-Level Testing,” dalam *2022 Fifth College of Science International Conference of Recent Trends in Information Technology (CSCTIT)*, Baghdad, Iraq: IEEE, Nov 2022, hlm. 208–213. doi: 10.1109/CSCTIT56299.2022.10145647.
- [58] R. E. Walpole, R. H. Myers, S. L. Myers, dan K. E. Ye, *Probability and Statistics for Engineers and Scientists*. Pearson Education, 2011. [Daring]. Tersedia pada: <https://books.google.co.id/books?id=PcksAAAAQBAJ>
- [59] D. C. Montgomery dan G. C. Runger, *Applied Statistics and Probability for Engineers*. John Wiley & Sons, 2010. [Daring]. Tersedia pada: https://books.google.co.id/books?id=_f4KrEcNAfEC
- [60] S. G. Kwak dan J. H. Kim, “Central limit theorem: the cornerstone of modern statistics.,” *Korean J. Anesthesiol.*, vol. 70, no. 2, hlm. 144–156, Apr 2017, doi: 10.4097/kjae.2017.70.2.144.
- [61] K. Ganesh, S. Mohapatra, S. Anbuudayasankar, dan P. Sivakumar, “User Acceptance Test,” hlm. 123–127, Jan 2014, doi: 10.1007/978-3-319-05927-3_9.
- [62] J. Dalton, “Acceptance Testing,” *Gt. Big Agile*, Des 2018, doi: 10.1007/978-1-4842-4206-3_8.
- [63] L. F. De Oliveira, C. Rodrigues, dan R. Bulcão-Neto, “Characterizing the Software Acceptance Testing and the Inclusion of People with Disabilities by Means of a Systematic Mapping,” *IEEE Lat. Am. Trans.*, vol. 21, hlm. 35–46, Jan 2023, doi: 10.1109/TLA.2023.10015143.
- [64] E. Halepovic, J. Pang, dan O. Spatscheck, “Can you GET me now? estimating the time-to-first-byte of HTTP transactions with passive measurements,” dalam *Proceedings of the 2012 Internet Measurement Conference*, dalam IMC ’12. New York, NY, USA: Association for Computing Machinery, 2012, hlm. 115–122. doi: 10.1145/2398776.2398789.
- [65] “What Is Time to First Byte (TTFB) and 5 Ways to Optimize It,” Coralogix. Diakses: 8 Juni 2025. [Daring]. Tersedia pada: <https://coralogix.com/guides/real-user-monitoring/time-to-first-byte-ttfb-5-ways-to-optimize/>
- [66] “Time to First Byte (TTFB) | Articles,” web.dev. Diakses: 9 Juni 2025. [Daring]. Tersedia pada: <https://web.dev/articles/ttfb>
- [67] P. H, M. S. Harshini, R. Tarun, dan R. D., “Benchmarking Indian E-Commerce Giants: Insights From Festive Sales Performance,” *2025 Int. Conf. Comput. Commun. Inf. Technol. ICCIT*, hlm. 936–941, Feb 2025, doi: 10.1109/ICCIT62592.2025.10928128.



- [68] C. Chen, Q. Meng, dan J. Huang, “Performance Optimization of Web Front-End Frameworks: Automatic Adjustment Strategies Based on Bayesian Optimization Algorithm,” *Proc. 2024 Int. Conf. Mach. Intell. Digit. Appl.*, Mei 2024, doi: 10.1145/3662739.3672180.
- [69] X. Zhu, T. Qiu, W. Qu, X. Zhou, M. Atiquzzaman, dan D. O. Wu, “BLS-Location: A Wireless Fingerprint Localization Algorithm Based on Broad Learning,” *IEEE Trans. Mob. Comput.*, vol. 22, no. 1, hlm. 115–128, Jan 2023, doi: 10.1109/tmc.2021.3073005.

