

REFERENCES

- [1] N. El-Sheimy and Y. Li, "Indoor navigation: state of the art and future trends," *Satellite Navigation*, vol. 2, no. 1. Springer, Dec. 01, 2021. doi: 10.1186/s43020-021-00041-3.
- [2] H. Huang and G. Gartner, "A survey of mobile indoor navigation systems," in *Lecture Notes in Geoinformation and Cartography*, 2010, vol. 0, no. 199089, pp. 305–319. doi: 10.1007/978-3-642-03294-3_20.
- [3] R. Ayyalasomayajula *et al.*, "Deep learning based wireless localization for indoor navigation," in *Proceedings of the Annual International Conference on Mobile Computing and Networking, MOBICOM*, Apr. 2020, pp. 214–227. doi: 10.1145/3372224.3380894.
- [4] E. Khorov, I. Levitsky, and I. F. Akyildiz, "Current Status and Directions of IEEE 802.11be, the Future Wi-Fi 7," *IEEE Access*, vol. 8, pp. 88664–88688, 2020, doi: 10.1109/ACCESS.2020.2993448.
- [5] C. Deng *et al.*, "IEEE 802.11be Wi-Fi 7: New Challenges and Opportunities," *IEEE Communications Surveys and Tutorials*, vol. 22, no. 4, pp. 2136–2166, Oct. 2020, doi: 10.1109/COMST.2020.3012715.
- [6] S. Szott *et al.*, "Wi-Fi Meets ML: A Survey on Improving IEEE 802.11 Performance with Machine Learning," *IEEE Communications Surveys and Tutorials*, vol. 24, no. 3, pp. 1843–1893, Sep. 2022, doi: 10.1109/COMST.2022.3179242.
- [7] A. Mansour *et al.*, "Everywhere: A Framework for Ubiquitous Indoor Localization," *IEEE Internet Things J*, 2022, doi: 10.1109/JIOT.2022.3222003.
- [8] J. Xiao, Z. Zhou, Y. Yi, and L. M. Ni, "A survey on wireless indoor localization from the device perspective," *ACM Computing Surveys*, vol. 49, no. 2. Association for Computing Machinery, Jun. 01, 2016. doi: 10.1145/2933232.
- [9] F. Zafari, A. Gkelias, and K. K. Leung, "A Survey of Indoor Localization Systems and Technologies," *IEEE Communications Surveys and Tutorials*, vol. 21, no. 3, pp. 2568–2599, 2019, doi: 10.1109/COMST.2019.2911558.
- [10] X. Guo, N. Ansari, F. Hu, Y. Shao, N. R. Elikplim, and L. Li, "A survey on fusion-based indoor positioning," *IEEE Communications Surveys and Tutorials*, vol. 22, no. 1, pp. 566–594, Jan. 2020, doi: 10.1109/COMST.2019.2951036.
- [11] G. Li, E. Geng, Z. Ye, Y. Xu, J. Lin, and Y. Pang, "Indoor positioning algorithm based on the improved rssi distance model," *Sensors (Switzerland)*, vol. 18, no. 9, Sep. 2018, doi: 10.3390/s18092820.
- [12] X. Liu, J. Yin, S. Zhang, B. Ding, S. Guo, and K. Wang, "Range-Based Localization for Sparse 3-D Sensor Networks," *IEEE Internet Things J*, vol. 6, no. 1, pp. 753–764, Feb. 2019, doi: 10.1109/JIOT.2018.2856267.
- [13] F. B. Sorbelli, C. M. Pinotti, S. Silvestri, and S. K. Das, "Measurement Errors in Range-Based Localization Algorithms for UAVs: Analysis and Experimentation," *IEEE Trans Mob Comput*, vol. 21, no. 4, pp. 1291–1304, Apr. 2022, doi: 10.1109/TMC.2020.3020584.

- [14] S. Yang, Z. Yuan, and W. Li, "Error data analytics on RSS range-based localization," *Big Data Mining and Analytics*, vol. 3, no. 3, pp. 155–170, Sep. 2020, doi: 10.26599/BDMA.2020.9020001.
- [15] J. Luomala and I. Hakala, "Adaptive range-based localization algorithm based on trilateration and reference node selection for outdoor wireless sensor networks," *Computer Networks*, vol. 210, Jun. 2022, doi: 10.1016/j.comnet.2022.108865.
- [16] A. B. Adege, H. P. Lin, G. B. Tarekegn, and S. S. Jeng, "Applying deep neural network (DNN) for robust indoor localization in multi-building environment," *Applied Sciences (Switzerland)*, vol. 8, no. 7, Jun. 2018, doi: 10.3390/app8071062.
- [17] N. Jing, B. Zhang, and L. Wang, "A Novel Anchor-Free Localization Method Using Cross-Technology Communication for Wireless Sensor Network †," *Electronics (Switzerland)*, vol. 11, no. 23, Dec. 2022, doi: 10.3390/electronics11234025.
- [18] D. J. Suroso, A. B. Krisnawan, R. Rupaksi, and S. Hawibowo, "IMPLEMENTATION OF RANGE-BASED AND RANGE-FREE 3D INDOOR LOCALIZATION IN MULTI-STORY BUILDING BASED ON RSSI," *ASEAN Engineering Journal*, vol. 12, no. 1, pp. 93–103, Mar. 2022, doi: 10.11113/AEJ.V12.16801.
- [19] A. Hadir, Y. Regragui, and N. M. Garcia, "Accurate Range-Free Localization Algorithms Based on PSO for Wireless Sensor Networks," *IEEE Access*, vol. 9, pp. 149906–149924, 2021, doi: 10.1109/ACCESS.2021.3123360.
- [20] A. Coluccia and A. Fascista, "Hybrid TOA/RSS range-based localization with self-calibration in asynchronous wireless networks," *Journal of Sensor and Actuator Networks*, vol. 8, no. 2, May 2019, doi: 10.3390/jsan8020031.
- [21] Y. Jin, L. Zhou, L. Zhang, Z. Hu, and J. Han, "A Novel Range-Free Node Localization Method for Wireless Sensor Networks," *IEEE Wireless Communications Letters*, vol. 11, no. 4, pp. 688–692, Apr. 2022, doi: 10.1109/LWC.2021.3140063.
- [22] C. Li, L. Mo, and D. Zhang, "Review on UHF RFID Localization Methods," *IEEE Journal of Radio Frequency Identification*, vol. 3, no. 4, pp. 205–215, Dec. 2019, doi: 10.1109/JRFID.2019.2924346.
- [23] J. L. Gomez-Tornero, D. Canete-Rebenaque, J. A. Lopez-Pastor, and A. S. Martinez-Sala, "Hybrid Analog-Digital Processing System for Amplitude-Monopulse RSSI-Based MIMO WiFi Direction-of-Arrival Estimation," *IEEE Journal on Selected Topics in Signal Processing*, vol. 12, no. 3, pp. 529–540, Jun. 2018, doi: 10.1109/JSTSP.2018.2827701.
- [24] A. El-Naggar, A. Wassal, and K. Sharaf, "Indoor positioning using WiFi RSSI trilateration and INS sensor fusion system simulation," in *ACM International Conference Proceeding Series*, Oct. 2019, pp. 21–26. doi: 10.1145/3365245.3365261.
- [25] S. Sadowski and P. Spachos, "RSSI-Based Indoor Localization with the Internet of Things," *IEEE Access*, vol. 6, pp. 30149–30161, Jun. 2018, doi: 10.1109/ACCESS.2018.2843325.
- [26] W. Gong and J. Liu, "RoArray: Towards More Robust Indoor Localization Using Sparse Recovery with Commodity WiFi," *IEEE Trans Mob Comput*, vol. 18, no. 6, pp. 1380–1392, Jun. 2019, doi: 10.1109/TMC.2018.2860018.

- [27] D. Wu *et al.*, "WiTraj: Robust Indoor Motion Tracking with WiFi Signals," *IEEE Trans Mob Comput*, 2021, doi: 10.1109/TMC.2021.3133114.
- [28] M. Rea, T. E. Abrudan, D. Giustiniano, H. Claussen, and V. M. Kolmonen, "Smartphone positioning with radio measurements from a single wifi access point," in *CoNEXT 2019 - Proceedings of the 15th International Conference on Emerging Networking Experiments and Technologies*, Dec. 2019, pp. 200–206. doi: 10.1145/3359989.3365427.
- [29] H. Cao *et al.*, "WiFi RTT Indoor Positioning Method Based on Gaussian Process Regression for Harsh Environments," *IEEE Access*, vol. 8, pp. 215777–215786, 2020, doi: 10.1109/ACCESS.2020.3041773.
- [30] Y. Dong, T. Arslan, and Y. Yang, "Real-Time NLOS/LOS Identification for Smartphone-Based Indoor Positioning Systems Using WiFi RTT and RSS," *IEEE Sens J*, vol. 22, no. 6, pp. 5199–5209, Mar. 2022, doi: 10.1109/JSEN.2021.3119234.
- [31] X. Liu, B. Zhou, Z. Wu, A. Liang, and Q. Li, "An Indoor 3-D Quadrotor Localization Algorithm Based on WiFi RTT and MEMS Sensors," *IEEE Internet Things J*, vol. 9, no. 21, pp. 20879–20888, Nov. 2022, doi: 10.1109/JIOT.2022.3175809.
- [32] Z. Zhang, H. Du, S. Choi, and S. H. Cho, "TIPS: Transformer Based Indoor Positioning System Using Both CSI and DoA of WiFi Signal," *IEEE Access*, vol. 10, pp. 111363–111376, 2022, doi: 10.1109/ACCESS.2022.3215504.
- [33] Z. Gao, Y. Gao, S. Wang, D. Li, and Y. Xu, "CRISLoc: Reconstructable CSI Fingerprinting for Indoor Smartphone Localization," *IEEE Internet Things J*, vol. 8, no. 5, pp. 3422–3437, Mar. 2021, doi: 10.1109/JIOT.2020.3022573.
- [34] Y. Zhang, C. Qu, and Y. Wang, "An Indoor Positioning Method Based on CSI by Using Features Optimization Mechanism with LSTM," *IEEE Sens J*, vol. 20, no. 9, pp. 4868–4878, May 2020, doi: 10.1109/JSEN.2020.2965590.
- [35] T. K. Geok *et al.*, "Review of indoor positioning: Radio wave technology," *Applied Sciences (Switzerland)*, vol. 11, no. 1. MDPI AG, pp. 1–44, Jan. 01, 2021. doi: 10.3390/app11010279.
- [36] N. M. Nguyen *et al.*, "Performance evaluation of non-GPS based localization techniques under shadowing effects," *Sensors (Switzerland)*, vol. 19, no. 11, Jun. 2019, doi: 10.3390/s19112633.
- [37] N. Dvorecki, O. Bar-Shalom, L. Banin, and Y. Amizur, "A machine learning approach for Wi-Fi RTT ranging," in *ION 2019 International Technical Meeting Proceedings*, 2019, pp. 435–444. doi: 10.33012/2019.16702.
- [38] J. v. Simela, J. A. Marshall, and L. K. Daneshmend, "Automated laser scanner 2D positioning and orienting by method of triangulation for underground mine surveying," in *ISARC 2013 - 30th International Symposium on Automation and Robotics in Construction and Mining, Held in Conjunction with the 23rd World Mining Congress*, 2013, pp. 708–717. doi: 10.22260/isarc2013/0078.
- [39] Y. Xu, Y. Zhuang, and J. J. Gu, "An Improved 3D Localization Algorithm for the Wireless Sensor Network," *Int J Distrib Sens Netw*, vol. 2015, 2015, doi: 10.1155/2015/315714.

- [40] R. Want, W. Wang, and S. Chesnutt, "Accurate Indoor Location for the IoT," *Computer (Long Beach Calif)*, vol. 51, no. 8, pp. 66–70, Aug. 2018, doi: 10.1109/MC.2018.3191259.
- [41] J. J. Caffery and G. L. Stüber, "Overview of radiolocation in CDMA cellular systems," *IEEE Communications Magazine*, vol. 36, no. 4, pp. 38–45, 1998, doi: 10.1109/35.667411.
- [42] X. Wang, Z. Wang, and B. O'Dea, "A TOA-based location algorithm reducing the errors due to non-line-of-sight (NLOS) propagation," *IEEE Trans Veh Technol*, vol. 52, no. 1, pp. 112–116, Jan. 2003, doi: 10.1109/TVT.2002.807158.
- [43] M. McGuire, K. N. Plataniotis, and A. N. Venetsanopoulos, "Location of mobile terminals using time measurements and survey points," *IEEE Trans Veh Technol*, vol. 52, no. 4, pp. 999–1011, 2003, doi: 10.1109/TVT.2003.814222.
- [44] B. T. Fang, "Trilateration and extension to global positioning system navigation," *Journal of Guidance, Control, and Dynamics*, vol. 9, no. 6, pp. 715–717, 1986, doi: 10.2514/3.20169.
- [45] Y. Zhou, "A closed-form algorithm for the least-squares trilateration problem," *Robotica*, vol. 29, no. 3, pp. 375–389, May 2011, doi: 10.1017/S0263574710000196.
- [46] Y. I. Wu, H. Wang, and X. Zheng, "WSN Localization Using RSS in Three-Dimensional Space - A Geometric Method With Closed-Form Solution," *IEEE Sens J*, vol. 16, no. 11, pp. 4397–4404, Jun. 2016, doi: 10.1109/JSEN.2016.2547444.
- [47] Y. S. Chen, D. J. Deng, and C. C. Teng, "Range-Based Localization Algorithm for Next Generation Wireless Networks Using Radical Centers," *IEEE Access*, vol. 4, pp. 2139–2153, 2016, doi: 10.1109/ACCESS.2016.2551704.
- [48] H. Pan, X. Qi, M. Liu, and L. Liu, "An UWB-based indoor coplanar localization and anchor placement optimization method," *Neural Comput Appl*, vol. 34, no. 19, pp. 16845–16860, Oct. 2022, doi: 10.1007/s00521-022-07329-8.
- [49] K. H. Kim, N. J. Park, H. G. Lee, and H. S. Ahn, "3-D Localization with Coplanar Anchors," *IEEE Communications Letters*, 2022, doi: 10.1109/LCOMM.2022.3216030.
- [50] N. Siddalingaih and J. Chandrika, "An Efficient Environmental Channel Modelling in 802.11p MAC Protocol for V2I," *Indonesian Journal of Electrical Engineering and Computer Science*, vol. 7, pp. 404–414, Feb. 2017, doi: 10.11591/ijeecs.v7.i2.pp404-414.
- [51] A. Pérez *et al.*, "Run-Time Reconfigurable MPSoC-Based On-Board Processor for Vision-Based Space Navigation," *IEEE Access*, vol. 8, pp. 59891–59905, 2020, doi: 10.1109/ACCESS.2020.2983308.