[12] Y. Jung and H. Kim, "Detection of PVC by using a wavelet-based statistical ECG monitoring procedure," *Biomed. Signal Process. Control*, vol. 36, pp. 176–182, Jul. 2017, doi: 10.1016/j.bspc.2017.03.023.

[13] M. Sharma, R. S. Tan, and U. R. Acharya, "Automated heartbeat classification and detection of arrhythmia using optimal orthogonal wavelet filters," *Informatics Med. Unlocked*, vol. 16, p. 100221, Jan. 2019, doi: 10.1016/j.imu.2019.100221.

[14] N. Sinha and A. Das, "Automatic diagnosis of cardiac arrhythmias based on three stage feature fusion and classification model using DWT," *Biomed. Signal Process. Control*, vol. 62, p. 102066, Sep. 2020, doi: 10.1016/j.bspc.2020.102066.

[15] R. Arvanaghi, S. Daneshvar, H. Seyedarabi, and A. Goshvarpour, "Fusion of ECG and ABP signals based on wavelet transform for cardiac arrhythmias classification," *Comput. Methods Programs Biomed.*, vol. 151, pp. 71–78, Nov. 2017, doi: 10.1016/j.cmpb.2017.08.013.

[16] C. K. Jha and M. H. Kolekar, "Cardiac arrhythmia classification using tunable Q-wavelet transform based features and support vector machine classifier," *Biomed. Signal Process. Control*, vol. 59, p. 101875, May 2020, doi: 10.1016/j.bspc.2020.101875.

[17] H. Zhou *et al.*, "A Novel Cardiac Arrhythmias Detection Approach for Real-Time Ambulatory ECG Diagnosis," *Int. J. Pattern Recognit. Artif. Intell.*, vol. 31, no. 10, Oct. 2017, doi: 10.1142/S0218001417580046.

[18] E. Ramirez, P. Melin, and G. Prado-Arechiga, "Hybrid model based on neural networks, type-1 and type-2 fuzzy systems for 2-lead cardiac arrhythmia classification," *Expert Syst. Appl.*, vol. 126, pp. 295–307, Jul. 2019, doi: 10.1016/j.eswa.2019.02.035.

[19] P. Kora, K. Meenakshi, K. Swaraja, A. Rajani, and M. Kafiul Islam, "Detection of Cardiac arrhythmia using fuzzy logic," *Informatics Med. Unlocked*, vol. 17, p. 100257, Jan. 2019, doi: 10.1016/j.imu.2019.100257.

[20] M. Lee, T. G. Song, and J. H. Lee, "Heartbeat classification using local transform pattern feature and hybrid neural fuzzy-logic system based on self-organizing map," *Biomed. Signal Process. Control*, vol. 57, p. 101690, Mar. 2020, doi: 10.1016/j.bspc.2019.101690.

[21] M. Mohanty, S. Sahoo, P. Biswal, and S. Sabut, "Efficient classification of ventricular arrhythmias using feature selection and C4.5 classifier," *Biomed. Signal Process. Control*, vol. 44, pp. 200–208, Jul. 2018, doi: 10.1016/j.bspc.2018.04.005.

[22] K. Gajowniczek, I. Grzegorczyk, and T. Ząbkowski, "Reducing false arrhythmia alarms using different methods of probability and class assignment in random forest learning methods," *Sensors (Switzerland)*, vol. 19, no. 7, p. 1588, Apr. 2019, doi: 10.3390/s19071588.

[23] K. Gajowniczek, I. Grzegorczyk, T. Ząbkowski, and C. Bajaj, "Weighted random forests to improve arrhythmia classification," *Electron.*, vol. 9, no. 1, p. 99, Jan. 2020, doi: 10.3390/electronics9010099.

[24] W. Yang, Y. Si, D. Wang, and B. Guo, "Automatic recognition of arrhythmia based on principal component analysis network and linear support vector machine," *Comput. Biol. Med.*, vol. 101, pp. 22–32, Oct. 2018, doi: 10.1016/j.compbiomed.2018.08.003.

[25] K. N. V. P. S. Rajesh and R. Dhuli, "Classification of ECG heartbeats using nonlinear decomposition methods and support vector machine," *Comput. Biol. Med.*, vol. 87, pp. 271–284, Aug. 2017, doi: 10.1016/j.compbiomed.2017.06.006.

[26] M. A. Escalona-Morán, M. C. Soriano, I. Fischer, and C. R. Mirasso, "Electrocardiogram classification using reservoir computing with logistic regression," *IEEE J. Biomed. Heal. Informatics*, vol. 19, no. 3, pp. 892–898, 2015, doi: 10.1109/JBHI.2014.2332001.

[27] U. R. Acharya *et al.*, "A deep convolutional neural network model to classify heartbeats," *Comput. Biol. Med.*, vol. 89, pp. 389–396, Oct. 2017, doi: 10.1016/j.compbiomed.2017.08.022.

[28] S. Mousavi and F. Afghah, "Inter- and Intra- Patient ECG Heartbeat Classification for Arrhythmia Detection: A Sequence to Sequence Deep Learning Approach," in *ICASSP, IEEE International Conference on Acoustics, Speech and Signal Processing - Proceedings*, May 2019, vol. 2019-May, pp. 1308–1312, doi: 10.1109/ICASSP.2019.8683140.

[29] A. Y. Hannun *et al.*, "Cardiologist-level arrhythmia detection and classification in ambulatory electrocardiograms using a deep neural network," *Nat. Med.*, vol. 25, no. 1, pp. 65–69, 2019, doi: 10.1038/s41591-018-0268-3.

[30] L. Guo, G. Sim, and B. Matuszewski, "Inter-patient ECG classification with convolutional and recurrent neural networks," *Biocybern. Biomed. Eng.*, vol. 39, no. 3, pp. 868–879, Jul. 2019, doi: 10.1016/j.bbe.2019.06.001.

[31] S. Saadatnejad, M. Oveisi, and M. Hashemi, "LSTM-Based ECG Classification for Continuous Monitoring on Personal Wearable Devices," *IEEE J. Biomed. Heal. Informatics*, vol. 24, no. 2, pp. 515–523, Feb. 2020, doi: 10.1109/JBHI.2019.2911367.

[32] M. Alfaras, M. C. Soriano, and S. Ortín, "A Fast Machine Learning Model for ECG-Based Heartbeat Classification and Arrhythmia Detection," *Front. Phys.*, vol. 7, p. 103, Jul. 2019, doi: 10.3389/fphy.2019.00103.

[33] J. P. Allam, S. Samantray, and S. Ari, "SpEC: A system for patient specific ECG beat classification using deep residual network," *Biocybern. Biomed. Eng.*, vol. 40, no. 4, pp. 1446–1457, Oct. 2020, doi: 10.1016/j.bbe.2020.08.001.

[34] P. De Chazal, M. O'Dwyer, and R. B. Reilly, "Automatic classification of heartbeats using ECG morphology and heartbeat interval features," *IEEE Trans. Biomed. Eng.*, vol. 51, no. 7, pp. 1196–1206, Jul. 2004, doi: 10.1109/TBME.2004.827359.

[35] ISO/ANSI/AAMI, "ANSI/AAMI/ISO EC57: Testing and reporting performance results of cardiac rhythm and ST-segment measurement algorithms," 2008.

[36] G. De Lannoy, D. François, J. Delbeke, and M. Verleysen, "Weighted conditional random fields for supervised interpatient heartbeat classification," *IEEE Trans. Biomed. Eng.*, vol. 59, no. 1, pp. 241–247, Jan. 2012, doi: 10.1109/TBME.2011.2171037.

[37] N. V. Chawla, K. W. Bowyer, L. O. Hall, and W. P. Kegelmeyer, "SMOTE: Synthetic minority over-sampling technique," *J. Artif. Intell. Res.*, vol. 16, pp. 321–357, 2002, doi: 10.1613/jair.953.

[38] A. S. Glas, J. G. Lijmer, M. H. Prins, G. J. Bonsel, and P. M. M. Bossuyt, "The diagnostic odds ratio: A single indicator of test performance," *J. Clin. Epidemiol.*, vol. 56, no. 11, pp. 1129–1135, Nov. 2003, doi: 10.1016/S0895-4356(03)00177-X.

[39] J. Cohen, "A Coefficient of Agreement for Nominal Scales," *Educ. Psychol. Meas.*, vol. 20, no. 1, pp. 37–46, Apr. 1960, doi: 10.1177/001316446002000104.

[40] J. R. Landis and G. G. Koch, "The Measurement of Observer Agreement for Categorical Data," *Biometrics*, vol. 33, no. 1, p. 159, Mar. 1977, doi: 10.2307/2529310.

[41] M. I. Rizqyawan, A. Munandar, M. F. Amri, R. Korio Utoro, and A. Pratondo, "Quantized Convolutional Neural Network toward Real-time Arrhythmia Detection in Edge Device," in *Proceeding - 2020 International Conference on Radar, Antenna, Microwave, Electronics and Telecommunications, ICRAMET 2020*, Nov. 2020, pp. 234–239, doi: 10.1109/ICRAMET51080.2020.9298667.