

REFERENCES

- [1] A. Kiran, S. W. Prakash, B. A. Kumar, Likhitha, T. Sameeratmaja, and U. S. S. R. Charan, "Intrusion detection system using machine learning," in *2023 International Conference on Computer Communication and Informatics (IC-CCI)*, 2023, pp. 1–4.
- [2] J. Liu, K. Xiao, L. Luo, Y. Li, and L. Chen, "An intrusion detection system integrating network-level intrusion detection and host-level intrusion detection," in *2020 IEEE 20th International Conference on Software Quality, Reliability and Security (QRS)*, 2020, pp. 122–129.
- [3] P. K. Mvula, P. Branco, G.-V. Jourdan, and H. L. Viktor, "A survey on the applications of semi-supervised learning to cyber-security," *ACM Comput. Surv.*, vol. 56, no. 10, Jun. 2024. [Online]. Available: <https://doi.org/10.1145/3657647>
- [4] R. Shu, T. Xia, Q. H. Tu, L. Williams, and T. Menzies, "Reducing the cost of training security classifier (via optimized semi-supervised learning)," 05 2022.
- [5] A. Medeiros, A. C. Gorgônio, K. M. O. Vale, F. L. Gorgônio, and A. M. d. P. Canuto, "Flexcon-ce: A semi-supervised method with an ensemble-based adaptive confidence," in *Intelligent Systems: 12th Brazilian Conference, BRACIS 2023, Belo Horizonte, Brazil, September 25–29, 2023, Proceedings, Part III*. Berlin, Heidelberg: Springer-Verlag, 2023, p. 95–109. [Online]. Available: https://doi.org/10.1007/978-3-031-45392-2_7
- [6] A. Rehman, A. Khan, M. A. Ali, M. U. Khan, S. U. Khan, and L. Ali, "Performance analysis of pca, sparse pca, kernel pca and incremental pca algorithms for heart failure prediction," in *2020 International Conference on Electrical, Communication, and Computer Engineering (ICECCE)*, 2020, pp. 1–5.
- [7] F. Yang, S. Liu, E. Dobriban, and D. P. Woodruff, "How to reduce dimension with pca and random projections?" *IEEE Transactions on Information Theory*, vol. 67, no. 12, pp. 8154–8189, 2021.
- [8] K. M. O. Vale, A. C. Gorgônio, F. D. L. E. Gorgônio, and A. M. D. P. Canuto, "An efficient approach to select instances in self-training and co-training semi-supervised methods," *IEEE Access*, vol. 10, pp. 7254–7276, 2022.

- [9] A. Medeiros, A. Gorgônio, K. Vale, F. Gorgônio, and A. Canuto, "Flexcon-ce: A semi-supervised method with an ensemble-based adaptive confidence," in *Anais da XII Brazilian Conference on Intelligent Systems*. Porto Alegre, RS, Brasil: SBC, 2023, pp. 95–109. [Online]. Available: <https://sol.sbc.org.br/index.php/bracis/article/view/28409>
- [10] R. Lazzarini, H. Tianfield, and V. Charissis, "A stacking ensemble of deep learning models for iot intrusion detection," *Knowledge-Based Systems*, vol. 279, p. 110941, 09 2023.
- [11] A. Odeh and A. Abu Taleb, "Ensemble-based deep learning models for enhancing iot intrusion detection," *Applied Sciences*, vol. 13, no. 21, 2023. [Online]. Available: <https://www.mdpi.com/2076-3417/13/21/11985>
- [12] M. S. Amine, F. A. Nada, and K. M. Hosny, "Improved model for intrusion detection in the internet of things," *Scientific Reports*, 2025.
- [13] F. S. Alsubaei, "Smart deep learning model for enhanced iot intrusion detection," *Scientific Reports*, 2025.
- [14] M. A. Khan, M. A. Khan, S. U. Jan, J. Ahmad, S. S. Jamal, A. A. Shah, N. Pitropakis, and W. J. Buchanan, "A deep learning-based intrusion detection system for mqtt enabled iot," *Sensors*, 2021.
- [15] M. Solanki and S. Gupta, "A novel intrusion detection framework using ensemble learning in mqtt iot applications," *Annals of Mathematics and Artificial Intelligence*, 2025.
- [16] Y. Zhang, J. Niu, G. He, L. Zhu, and D. Guo, "Network intrusion detection based on active semi-supervised learning," in *2021 51st Annual IEEE/IFIP International Conference on Dependable Systems and Networks Workshops (DSN-W)*, 2021, pp. 129–135.
- [17] Z. Ghasemi, H. A. Khorshidi, and U. Aickelin, "A survey on optimisation-based semi-supervised clustering methods," in *2021 IEEE International Conference on Big Knowledge (ICBK)*, 2021, pp. 477–482.
- [18] C. Yabi and Z. Yongzhao, "Co-training semi-supervised active learning algorithm based on noise filter," in *2009 WRI Global Congress on Intelligent Systems*, vol. 3, 2009, pp. 524–528.

- [19] H. He, W. Yu, L. Yang, Y. Li, and L. Sun, "Anchor graph semi-supervised learning method based on evidence theory," in *2022 7th IEEE International Conference on Data Science in Cyberspace (DSC)*, 2022, pp. 262–267.
- [20] E. Ziyad and A. B. Mohammed, "Evaluation of pca variants for intrusion detection in iot networks," in *2024 Sixth International Conference on Intelligent Computing in Data Sciences (ICDS)*, 2024, pp. 1–5.
- [21] P. R. Agbedanu, R. Musabe, J. Rwigema, I. Gatare, and Y. Pavlidis, "Ipcasamknn: A novel network ids for resource constrained devices," in *2022 2nd International Seminar on Machine Learning, Optimization, and Data Science (ISMOL)*, 2022, pp. 540–545.
- [22] E. Bank Tavakoli, A. Beygi, and X. Yao, "Rpkn: An opencl-based fpga implementation of the dimensionality-reduced knn algorithm using random projection," *IEEE Transactions on Very Large Scale Integration (VLSI) Systems*, vol. 30, no. 4, pp. 549–552, 2022.
- [23] C. Qi, J. Diao, and L. Qiu, "On estimating model in feature selection with cross-validation," *IEEE Access*, vol. 7, pp. 33 454–33 463, 2019.
- [24] A. P. H, C. S, G. P. M. S, G. Pathak, A. Thakare, and P. Kumar, "Classifying the dna sequence using optimized naive bayes approach: A comparative analysis of machine learning algorithms," in *2025 2nd International Conference on Computational Intelligence, Communication Technology and Networking (CICITN)*, 2025, pp. 110–116.
- [25] D. Yuan, J. Huang, X. Yang, and J. Cui, "Improved random forest classification approach based on hybrid clustering selection," in *2020 Chinese Automation Congress (CAC)*, 2020, pp. 1559–1563.
- [26] E. Neto, S. Dadkhah, R. Ferreira, A. Zohourian, R. Lu, and A. Ghorbani, "Ciciot2023: A real-time dataset and benchmark for large-scale attacks in iot environment," 05 2023.