

REFERENCES

- [1] R. A. Radouan Ait Mouha, "Internet of Things (IoT)," *Journal of Data Analysis and Information Processing*, vol. 09, no. 02, pp. 77–101, 2021, doi: 10.4236/jdaip.2021.92006.
- [2] Y. Shah and S. Sengupta, "A survey on Classification of Cyber-attacks on IoT and IIoT devices," in *2020 11th IEEE Annual Ubiquitous Computing, Electronics & Mobile Communication Conference (UEMCON)*, IEEE, Oct. 2020, pp. 0406–0413. doi: 10.1109/UEMCON51285.2020.9298138.
- [3] M. Shafiq, Z. Gu, O. Cheikhrouhou, W. Alhakami, and H. Hamam, "The Rise of 'Internet of Things': Review and Open Research Issues Related to Detection and Prevention of IoT-Based Security Attacks," *Wirel Commun Mob Comput*, vol. 2022, pp. 1–12, Aug. 2022, doi: 10.1155/2022/8669348.
- [4] I. Martins, J. S. Resende, P. R. Sousa, S. Silva, L. Antunes, and J. Gama, "Host-based IDS: A review and open issues of an anomaly detection system in IoT," *Future Generation Computer Systems*, vol. 133, pp. 95–113, Aug. 2022, doi: 10.1016/j.future.2022.03.001.
- [5] E. Schiller, A. Aidoo, J. Fuhrer, J. Stahl, M. Zörjgen, and B. Stiller, "Landscape of IoT security," *Comput Sci Rev*, vol. 44, p. 100467, May 2022, doi: 10.1016/j.cosrev.2022.100467.
- [6] M. A. Ferrag, O. Friha, D. Hamouda, L. Maglaras, and H. Janicke, "Edge-IIoTset: A New Comprehensive Realistic Cyber Security Dataset of IoT and IIoT Applications for Centralized and Federated Learning," *IEEE Access*, vol. 10, pp. 40281–40306, 2022, doi: 10.1109/ACCESS.2022.3165809.
- [7] C. S. Kalutharage, X. Liu, C. Chrysoulas, N. Pitropakis, and P. Papadopoulos, "Explainable AI-Based DDOS Attack Identification Method for IoT Networks," *Computers*, vol. 12, no. 2, p. 32, Feb. 2023, doi: 10.3390/computers12020032.
- [8] Z. Zhang, H. Al Hamadi, E. Damiani, C. Y. Yeun, and F. Taher, "Explainable Artificial Intelligence Applications in Cyber Security: State-of-the-Art in Research," *IEEE Access*, vol. 10, pp. 93104–93139, 2022, doi: 10.1109/ACCESS.2022.3204051.
- [9] Z. Li, "Extracting spatial effects from machine learning model using local interpretation method: An example of SHAP and XGBoost," *Comput Environ Urban Syst*, vol. 96, p. 101845, Sep. 2022, doi: 10.1016/j.compenvurbsys.2022.101845.
- [10] Y. Wei, J.-S. Jang, A. Singh, F. Sabrina, and S. Ahmet Çamtepe, "Classification and Explanation of Distributed Denial-of-Service (DDoS) Attack Detection using Machine Learning and Shapley Additive Explanation (SHAP) Methods," *ArXiv*, 2023.
- [11] K. Roshan and A. Zafar, "Using Kernel SHAP XAI Method to Optimize the Network Anomaly Detection Model," in *2022 9th International Conference on Computing for Sustainable Global Development (INDIACom)*, IEEE, Mar. 2022, pp. 74–80. doi: 10.23919/INDIACom54597.2022.9763241.
- [12] Z. M. Jiyad, A. Al Maruf, Md. M. Haque, M. Sen Gupta, A. Ahad, and Z. Aung, "DDoS Attack Classification Leveraging Data Balancing and Hyperparameter Tuning Approach Using Ensemble Machine Learning with XAI," in *2024 Third International Conference on Power, Control and Computing Technologies (ICPC2T)*, IEEE, Jan. 2024, pp. 569–575. doi: 10.1109/ICPC2T60072.2024.10475035.
- [13] T. Zebin, S. Rezvy, and Y. Luo, "An Explainable AI-Based Intrusion Detection System for DNS Over HTTPS (DoH) Attacks," *IEEE Transactions on Information Forensics and Security*, vol. 17, pp. 2339–2349, 2022, doi: 10.1109/TIFS.2022.3183390.
- [14] D. Elreedy, A. F. Atiya, and F. Kamalov, "A theoretical distribution analysis of synthetic minority oversampling technique (SMOTE) for imbalanced learning," *Mach Learn*, vol. 113, no. 7, pp. 4903–4923, Jul. 2024, doi: 10.1007/s10994-022-06296-4.
- [15] T. Chen and C. Guestrin, "XGBoost," in *Proceedings of the 22nd ACM SIGKDD International Conference on Knowledge Discovery and Data Mining*, New York, NY, USA: ACM, Aug. 2016, pp. 785–794. doi: 10.1145/2939672.2939785.
- [16] Ismail *et al.*, "A Machine Learning-Based Classification and Prediction Technique for DDoS Attacks," *IEEE Access*, vol. 10, pp. 21443–21454, 2022, doi: 10.1109/ACCESS.2022.3152577.
- [17] S. M. Lundberg and S.-I. Lee, "A Unified Approach to Interpreting Model Predictions," in

Neural Information Processing Systems, 2017. [Online]. Available:
<https://api.semanticscholar.org/CorpusID:21889700>

- [18] S. K. Jagatheesaperumal, Q.-V. Pham, R. Ruby, Z. Yang, C. Xu, and Z. Zhang, “Explainable AI Over the Internet of Things (IoT): Overview, State-of-the-Art and Future Directions,” *IEEE Open Journal of the Communications Society*, vol. 3, pp. 2106–2136, 2022, doi: 10.1109/OJCOMS.2022.3215676.
- [19] T.-T.-H. Le, H. Kim, H. Kang, and H. Kim, “Classification and Explanation for Intrusion Detection System Based on Ensemble Trees and SHAP Method,” *Sensors*, vol. 22, no. 3, p. 1154, Feb. 2022, doi: 10.3390/s22031154.
- [20] B. Mahbooba, M. Timilsina, R. Sahal, and M. Serrano, “Explainable Artificial Intelligence (XAI) to Enhance Trust Management in Intrusion Detection Systems Using Decision Tree Model,” *Complexity*, vol. 2021, no. 1, Jan. 2021, doi: 10.1155/2021/6634811.