

## DAFTAR PUSTAKA

- Aldweesh, A., Derhab, A., Emam, A.Z., 2020. Deep learning approaches for anomaly-based intrusion detection systems: A survey, taxonomy, and open issues. *Knowledge-Based Systems* 189. <https://doi.org/10.1016/j.knosys.2019.105124>
- Aljawarneh, S., Aldwairi, M., Yassein, M.B., 2018. Anomaly-based intrusion detection system through feature selection analysis and building hybrid efficient model. *Journal of Computational Science* 25, 152–160. <https://doi.org/10.1016/j.jocs.2017.03.006>
- Alotaibi, S.D., Yadav, K., Aledaily, A.N., Alkwai, L.M., Yousef Dafhalla, A.K., Almansour, S., Lingamuthu, V., 2022. Deep Neural Network-Based Intrusion Detection System through PCA. *Mathematical Problems in Engineering* 2022. <https://doi.org/10.1155/2022/6488571>
- Alsaedi, A., Moustafa, N., Tari, Z., Mahmood, A., Adna N Anwar, 2020. TON-IoT telemetry dataset: A new generation dataset of IoT and IIoT for data-driven intrusion detection systems. *IEEE Access* 8, 165130–165150. <https://doi.org/10.1109/ACCESS.2020.3022862>
- Breiman, L., 2001. Random Forest. *Machine Learning* 45, 5–32. <https://doi.org/10.1017/CBO9781107415324.004>
- Caville, E., Lo, W.W., Layeghy, S., Portmann, M., 2022. Anomal-E: A Self-Supervised Network Intrusion Detection System based on Graph Neural Networks.
- Chaabouni, N., Mosbah, M., Zemmari, A., Sauvignac, C., Faruki, P., 2019. Network Intrusion Detection for IoT Security Based on Learning Techniques. *IEEE Communications Surveys and Tutorials* 21, 2671–2701. <https://doi.org/10.1109/COMST.2019.2896380>
- Chen, H., Zhang, H., Si, S., Li, Y., Boning, D., Hsieh, C.J., 2019. Robustness verification of tree-based models. *Advances in Neural Information Processing Systems* 32.
- Chen, T., Guestrin, C., 2016. XGBoost: A scalable tree boosting system. *Proceedings of the ACM SIGKDD International Conference on Knowledge Discovery and Data Mining* 13-17-Aug, 785–794. <https://doi.org/10.1145/2939672.2939785>
- Chowdhury, R.N., Chowdhury, M.M., Chowdhury, S., Islam, M.R., Ayub, M.A., Chowdhury, A., Kalpoma, K.A., 2020. Parameter Optimization and Performance Analysis of State-of-the-Art Machine Learning Techniques for Intrusion Detection System (IDS). *ICCIT 2020 - 23rd International Conference on Computer and Information Technology, Proceedings*. <https://doi.org/10.1109/ICCIT51783.2020.9392683>
- Debicha, I., Bauwens, R., Debatty, T., Dricot, J.M., Kenaza, T., Mees, W., 2023. TAD: Transfer learning-based multi-adversarial detection of evasion attacks against network intrusion detection systems. *Future Generation Computer Systems* 138, 185–197. <https://doi.org/10.1016/j.future.2022.08.011>
- Duan, G., Lv, H., Wang, H., Feng, G., 2022. Application of a Dynamic Line Graph

- Neural Network for Intrusion Detection with Semisupervised Learning. *IEEE Transactions on Information Forensics and Security*.  
<https://doi.org/10.1109/TIFS.2022.3228493>
- Gamage, S., Samarabandu, J., 2020. Deep learning methods in network intrusion detection: A survey and an objective comparison. *Journal of Network and Computer Applications* 169. <https://doi.org/10.1016/j.jnca.2020.102767>
- Geurts, P., Ernst, D., Wehenkel, L., 2006. Extremely randomized trees. *Machine Learning* 63, 3–42. <https://doi.org/10.1007/s10994-006-6226-1>
- Goodfellow, I., Bengio, Y., Courville, A., 2016. *Deep Learning*. MIT Press, London, England.
- Gowdhaman, V., Dhanapal, R., 2022. An intrusion detection system for wireless sensor networks using deep neural network. *Soft Computing* 26, 13059–13067. <https://doi.org/10.1007/s00500-021-06473-y>
- Guo, G., 2022. An Intrusion Detection System for the Internet of Things Using Machine Learning Models. 2022 3rd International Conference on Big Data, Artificial Intelligence and Internet of Things Engineering, ICBAIE 2022 332–335. <https://doi.org/10.1109/ICBAIE56435.2022.9985800>
- Hamilton, W.L., Ying, R., Leskovec, J., 2017. Inductive representation learning on large graphs. *Advances in Neural Information Processing Systems* 2017-Decem, 1025–1035.
- He, Y., Shen, Z., Cui, P., 2021. Towards Non-I.I.D. image classification: A dataset and baselines. *Pattern Recognition* 110. <https://doi.org/10.1016/j.patcog.2020.107383>
- Hindy, H., Brosset, D., Bayne, E., Seeam, A.K., Tachtatzis, C., Atkinson, R., Bellekens, X., 2020. A Taxonomy of Network Threats and the Effect of Current Datasets on Intrusion Detection Systems. *IEEE Access* 8, 104650–104675. <https://doi.org/10.1109/ACCESS.2020.3000179>
- Hu, B., Kamiya, K., Takahashi, K., Nakao, A., 2021. Multi-hop Graph Embedding for Botnet Detection. 2021 IEEE Global Communications Conference, GLOBECOM 2021 - Proceedings. <https://doi.org/10.1109/GLOBECOM46510.2021.9685712>
- Ibitoye, O., Shafiq, O., Matrawy, A., 2019. Analyzing adversarial attacks against deep learning for intrusion detection in IoT networks. 2019 IEEE Global Communications Conference, GLOBECOM 2019 - Proceedings. <https://doi.org/10.1109/GLOBECOM38437.2019.9014337>
- Injadat, M.N., Moubayed, A., Nassif, A.B., Shami, A., 2020. Systematic ensemble model selection approach for educational data mining. *Knowledge-Based Systems* 200. <https://doi.org/10.1016/j.knosys.2020.105992>
- Jamalipour, A., Murali, S., 2022. A Taxonomy of Machine-Learning-Based Intrusion Detection Systems for the Internet of Things: A Survey. *IEEE Internet of Things Journal* 9, 9444–9466. <https://doi.org/10.1109/JIOT.2021.3126811>
- Jiang, W., 2022. Graph-based deep learning for communication networks: A survey. *Computer Communications* 185, 40–54. <https://doi.org/10.1016/j.comcom.2021.12.015>
- Ke Guolin, Qi Meng, Thomas Finley, Taifeng Wang, Wei Chen, Weidong Ma,

- Qiwei Ye, Tie-Yan Liu, 2017. Lightgbm: A highly efficient gradient boosting decision tree. *Advances in neural information processing systems* 30.
- Kilincer, I.F., Ertam, F., Sengur, A., 2022. A comprehensive intrusion detection framework using boosting algorithms. *Computers and Electrical Engineering* 100. <https://doi.org/10.1016/j.compeleceng.2022.107869>
- Kingma, D.P., Ba, J.L., 2015. Adam: A method for stochastic optimization. 3rd International Conference on Learning Representations, ICLR 2015 - Conference Track Proceedings 1–15.
- Koroniatis, N., Moustafa, N., Sitnikova, E., Turnbull, B., 2019. Towards the development of realistic botnet dataset in the Internet of Things for network forensic analytics: Bot-IoT dataset. *Future Generation Computer Systems* 100, 779–796. <https://doi.org/10.1016/j.future.2019.05.041>
- Kuang, K., Cui, P., Athey, S., Xiong, R., Li, B., 2018. Stable prediction across unknown environments. *Proceedings of the ACM SIGKDD International Conference on Knowledge Discovery and Data Mining* 1617–1626. <https://doi.org/10.1145/3219819.3220082>
- Kumar, A., Shridhar, M., Swaminathan, S., Lim, T.J., 2022. Machine learning-based early detection of IoT botnets using network-edge traffic. *Computers and Security* 117. <https://doi.org/10.1016/j.cose.2022.102693>
- Lan, J., Lu, J.Z., Wan, G.G., Wang, Y.Y., Huang, C.Y., Zhang, S.B., Huang, Y.Y., Ma, J.N., 2022. E-minBatch GraphSAGE: An Industrial Internet Attack Detection Model. *Security and Communication Networks* 2022. <https://doi.org/10.1155/2022/5363764>
- Lawal, M.A., Shaikh, R.A., Hassan, S.R., 2020. An anomaly mitigation framework for iot using fog computing. *Electronics (Switzerland)* 9, 1–24. <https://doi.org/10.3390/electronics9101565>
- Li, J., Sun, P., Hu, Y., 2020. Traffic modeling and optimization in datacenters with graph neural network. *Computer Networks* 181. <https://doi.org/10.1016/j.comnet.2020.107528>
- Lian, W., Nie, G., Jia, B., Shi, D., Fan, Q., Liang, Y., 2020. An intrusion detection method based on decision tree-recursive feature elimination in ensemble learning. *Mathematical Problems in Engineering* 2020. <https://doi.org/10.1155/2020/2835023>
- Lin, C.H., Lin, Y.C., Wu, Y.J., Chung, W.H., Lee, T.S., 2021. A Survey on Deep Learning-Based Vehicular Communication Applications. *Journal of Signal Processing Systems* 93, 369–388. <https://doi.org/10.1007/s11265-020-01587-2>
- Little, M.A., Badawy, R., 2019. Causal bootstrapping.
- Liu, Y., Mu, Y., Chen, K., Li, Y., Guo, J., 2020. Daily Activity Feature Selection in Smart Homes Based on Pearson Correlation Coefficient. *Neural Processing Letters* 51, 1771–1787. <https://doi.org/10.1007/s11063-019-10185-8>
- Lo, W.W., Layeghy, S., Sarhan, M., Gallagher, M., Portmann, M., 2022. E-GraphSAGE: A Graph Neural Network based Intrusion Detection System for IoT, in: *Noms*.
- Makuvaza, A., Jat, D.S., Gamundani, A.M., 2021. Deep Neural Network (DNN) Solution for Real-time Detection of Distributed Denial of Service (DDoS)

- Attacks in Software Defined Networks (SDNs). SN Computer Science 2. <https://doi.org/10.1007/s42979-021-00467-1>
- Manzano Sanchez, R.A., Zaman, M., Goel, N., Naik, K., Joshi, R., 2022. Towards Developing a Robust Intrusion Detection Model Using Hadoop–Spark and Data Augmentation for IoT Networks †. Sensors 22. <https://doi.org/10.3390/s22207726>
- Mulyanto, M., Faisal, M., Prakosa, S.W., Leu, J.S., 2021. Effectiveness of focal loss for minority classification in network intrusion detection systems. Symmetry 13, 1–16. <https://doi.org/10.3390/sym13010004>
- Nasiri, H., Alavi, S.A., 2022. A Novel Framework Based on Deep Learning and ANOVA Feature Selection Method for Diagnosis of COVID-19 Cases from Chest X-Ray Images. Computational Intelligence and Neuroscience 2022. <https://doi.org/10.1155/2022/4694567>
- Nemcovsky, Y., Zheltonozhskii, E., Baskin, C., Chmiel, B., Bronstein, A.M., Mendelson, A., 2022. Adversarial robustness via noise injection in smoothed models. Applied Intelligence. <https://doi.org/10.1007/s10489-022-03423-5>
- Nguyen, D.D., Le, M.T., Cung, T.L., 2022. Improving intrusion detection in SCADA systems using stacking ensemble of tree-based models. Bulletin of Electrical Engineering and Informatics 11, 119–127. <https://doi.org/10.11591/eei.v11i1.3334>
- Petković, M., Kocev, D., Džeroski, S., 2020. Feature ranking for multi-target regression. Machine Learning 109, 1179–1204. <https://doi.org/10.1007/s10994-019-05829-8>
- Pujol-Perich, D., Suarez-Varela, J., Cabellos-Aparicio, A., Barlet-Ros, P., 2022. Unveiling the potential of Graph Neural Networks for robust Intrusion Detection. Performance Evaluation Review 49, 111–117. <https://doi.org/10.1145/3543146.3543171>
- Purnama, S.R., Istiyanto, J.E., Amrizal, M.A., Handika, V., Rochman, S., Dharmawan, A., 2022. Inductive Graph Neural Network with Causal Sampling for IoT Network Intrusion Detection System. IEEE.
- Saba, T., Rehman, A., Sadad, T., Kolivand, H., Bahaj, S.A., 2022. Anomaly-based intrusion detection system for IoT networks through deep learning model. Computers and Electrical Engineering 99. <https://doi.org/10.1016/j.compeleceng.2022.107810>
- Sarhan, M., Layeghy, S., Moustafa, N., Portmann, M., 2021. NetFlow Datasets for Machine Learning-Based Network Intrusion Detection Systems. Lecture Notes of the Institute for Computer Sciences, Social-Informatics and Telecommunications Engineering, LNICST 371 LNICST, 117–135. [https://doi.org/10.1007/978-3-030-72802-1\\_9](https://doi.org/10.1007/978-3-030-72802-1_9)
- Sarhan, M., Layeghy, S., Portmann, M., 2022. Towards a Standard Feature Set for Network Intrusion Detection System Datasets. Mobile Networks and Applications 27, 357–370. <https://doi.org/10.1007/s11036-021-01843-0>
- Shone, N., Ngoc, T.N., Phai, V.D., Shi, Q., 2018. A Deep Learning Approach to Network Intrusion Detection. IEEE Transactions on Emerging Topics in Computational Intelligence 2, 41–50. <https://doi.org/10.1109/TETCI.2017.2772792>

- Snoek, J., Larochelle, H., Adams, R.P., 2012. Practical Bayesian optimization of machine learning algorithms. *Advances in Neural Information Processing Systems* 4, 2951–2959.
- Thang, D.C., Dat, H.T., Tam, N.T., Jo, J., Hung, N.Q.V., Aberer, K., 2022. Nature vs. Nurture: Feature vs. Structure for Graph Neural Networks. *Pattern Recognition Letters* 159, 46–53. <https://doi.org/10.1016/j.patrec.2022.04.036>
- Wei, G., Zhao, J., Feng, Y., He, A., Yu, J., 2020. A novel hybrid feature selection method based on dynamic feature importance. *Applied Soft Computing Journal* 93. <https://doi.org/10.1016/j.asoc.2020.106337>
- Xiao, Q., Liu, J., Wang, Q., Jiang, Z., Wang, X., Yao, Y., 2020. Towards network anomaly detection using graph embedding. *Lecture Notes in Computer Science (including subseries Lecture Notes in Artificial Intelligence and Lecture Notes in Bioinformatics)* 12140 LNCS, 156–169. [https://doi.org/10.1007/978-3-030-50423-6\\_12](https://doi.org/10.1007/978-3-030-50423-6_12)
- Xu, H., Mannor, S., 2010. Robustness and generalization. *COLT 2010 - The 23rd Conference on Learning Theory* 503–515.
- Yang, L., Shami, A., 2020. On hyperparameter optimization of machine learning algorithms: Theory and practice. *Neurocomputing* 415, 295–316. <https://doi.org/10.1016/j.neucom.2020.07.061>
- Zeng, Z.R., Peng, W., Zeng, D., 2022. Improving the Stability of Intrusion Detection with Causal Deep Learning. *IEEE Transactions on Network and Service Management*. <https://doi.org/10.1109/TNSM.2022.3193099>
- Zhang, T., Shan, H.R., Little, M.A., 2022. Causal GraphSAGE: A robust graph method for classification based on causal sampling. *Pattern Recognition* 128. <https://doi.org/10.1016/j.patcog.2022.108696>