Network Intrusion dataset (CIC-IDS- 2017)  
<https://www.kaggle.com/datasets/chethuhn/network-intrusion-dataset>   
  
Summary:  
  
Test a number of popular supervised and unsupervised ML algorithms for identifying effective and efficient anomaly-based intrusion detection systems (ML-AIDS) of networks and computers.   
- supervised ML algorithms may include: artificial neural network (ANN), decision tree (DT), k-nearest neighbour (kNN), naive Bayes (NB), random forest (RF), support vector machine (SVM), logistic regression, adaptive boosting (AdaBoost), extreme Gradient Boosting (XGBoost), convolutional neural network (CNN) algorithms.  
- unsupervised ML algorithms may include: K-means, expectation-maximization (EM), self-organizing maps (SOM) algorithms.   
  
Implement different models of these algorithms, apply parameter turning and model training for each algorithm, to find optimal classifiers and perform the required evaluation.

Literature:  
  
<https://ieeexplore.ieee.org/abstract/document/9099844>   
  
<https://ieeexplore.ieee.org/abstract/document/9138871>   
  
<https://www.sciencedirect.com/science/article/pii/S1877050920307961>   
  
<https://publisher.uthm.edu.my/ojs/index.php/jscdm/article/view/8798/4556>   
  
<https://www.mdpi.com/1996-1073/13/10/2509#energies-13-02509-t004>