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Comparison of Feature Selection Methods for Supervised Learning

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Abstract

The technology related to the transmission of wireless networks are enhanced and with that many devices are connected to the internet to work consistently among them. Then the utilization of networks multi-folded and unknown persons known as intruders begin to access data without any intimation to the user. To control them the IDS are designed, where the unknown access is detected and prevented from further access. In the pre-processing stage of IDS, the various irrelevant features are identified and eliminated by the process of feature selection of large data stored. The mutual information between features and class is evaluated in the feature selection process which is followed in all the previous proposed papers. But there is weak interaction between features and class which is a common drawback. To overcome this problem various methodologies based on mutual information like JMIM and NJMIM is proposed by Bennaser et.al with a classification accuracy of 90.77% with 8 features using Parkinson's dataset and NJMIM with 83% noted from the graph with sonar dataset which outperformed CMIM, DISR, mRMR, JMI, IG. In Redundant Penalty feature mutual information (RPFMI), the relationship between features and class is given much importance with a classification accuracy of 99.77% using the KDDCUP dataset and in MMIFS the classification accuracy is 94% with the same dataset. So, this study paves the way to develop more techniques in feature selection.

Key words:

Region of Interest (ROI), Machine learning, Neural networks

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