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A Comparative Study of Algorithms for IDS

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Abstract: *Nowadays, it is very important to maintain a high level of data security to ensure safe and reliable transfer of data between different organizations. Cyber Attacks, or attacks on computer networks, are already widespread and impact almost everyone and every internet-connected device. To avoid these attacks there are various approaches available but they are not quite efficient, therefore machine learning and deep learning are now being used by organizations to prevent these kinds of attacks because they are successful without requiring human intervention. The primary advantage of machine learning is its inherent ability to recognize, stop, prevent, recover and even cope up with various types of threats without the need of explicit programming. This work is discussing various algorithms available to prevent such cyber attacks. Here we include the following algorithms: linear support vector machine, quadratic support vector machine, K- nearest- neighbor, linear discriminant analysis classifier, quadratic discriminant analysis classifier, multilayer perceptron classifier, auto encoder. The work focuses on providing more accurate algorithms among these to improve the performance. The dataset used for this work was KDD. The datasets will be processed using the modified methodology based on the number of features.*

Keywords: Intrusion Detection System, KDD, Machine Learning, Deep Learning, Algorithm, Computer Network, Support Vector, Cyber attacks

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