

# Review paper on Machine Learning based Intrusion Detection System in Internet of Vehicles

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**Abstract**— *The automated world was once a myth, but it is now a reality. We are in a decade of progress in the automation sector, and as our gadgets become smarter and more networked, we are working on making automobiles smarter and more interconnected. The Internet of Vehicles (IoV) is a new technology that combines the Internet of Things (IoT) and mobile internet, with vehicles acting as intelligent moving objects. We combine the Internet of Things (IoT) with VANETs (Vehicular Ad-hoc Networks) to improve the current capabilities of Intelligent Transportation Systems (ITS). The ultimate focus of IOV is to optimize the driving experience by reducing accidents, traffic handling, secure navigation, intelligent transportation control, and inter-vehicle communication. With the fast expansion of IOV, it attracts the attention of many attackers, resulting in a plethora of vulnerabilities and issues that must be tackled in order to make the IOV network more secure and trustworthy. As the Artificial intelligence (AI) sector grows, numerous algorithms can be employed to identify attacks and aid in the development of an IDS(Intrusion-Detection-System) that will aid in the detection of breaches on the IOV network more precisely. Intrusion detection systems based on machine learning(ML-IDS) are becoming increasingly popular for detecting and responding to cyber-attacks in the IoV. In this review, we discussed the safety concerns, potential attacks, and existing solutions on the IOV network. We also outline the major open research difficulties in the literature and offer suggestions for increasing IoV security.*

**Keywords:-** *Internet of Vehicles, Vehicular ad-hoc network, Internet of Things, Intelligent Transportation Systems, Artificial intelligence, Intrusion Detection System.*