

# Enhancing Cybersecurity in Autonomous Vehicles through Artificial Intelligence

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**Abstract.** The study explores the application of artificial intelligence in enhancing cybersecurity measures for autonomous vehicles. As these vehicles become increasingly reliant on complex software, they are vulnerable to various cyber threats. The research discusses AI techniques such as anomaly detection and threat intelligence to safeguard vehicle systems. The paper demonstrates how AI can dynamically respond to threats and adapt to new attack vectors, thereby ensuring robust security. With a focus on real-world applications, the study provides a comprehensive overview of current challenges and potential solutions in securing autonomous vehicle networks.

**Keywords:** cybersecurity, autonomous, vehicles, artificial, threats

**Introduction:** Autonomous vehicles represent a significant leap forward in transportation technology, promising enhanced safety and convenience. However, their reliance on intricate software systems exposes them to a wide array of cybersecurity threats. Addressing these vulnerabilities is paramount to ensuring the safe deployment of autonomous technologies. This research investigates the role of artificial intelligence in augmenting cybersecurity protocols within autonomous vehicles. By employing AI-driven techniques such as anomaly detection and real-time threat intelligence, the study aims to develop robust frameworks to protect against cyber attacks. The research provides a critical assessment of the existing threats and proposes AI-based solutions to mitigate potential risks. Such advancements are essential to fostering public trust and facilitating the

broader adoption of autonomous vehicles.  
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### **References**

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