Advancements in Neural Network Architectures for Autonomous Vehicles

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Abstract. This article provides a comprehensive review of the latest advancements in neural network architectures tailored for autonomous vehicle technology. As the demand for safer and more efficient autonomous systems grows, researchers are continually exploring innovative neural designs to enhance vehicle perception, decision-making, and control mechanisms. We evaluate various neural network models, including convolutional and recurrent neural networks, and their integration into autonomous systems. Our findings indicate significant improvements in vehicle navigation and obstacle detection, underscoring the importance of these advancements for future developments in the autonomous vehicle industry.

Keywords: neural, network, autonomous, vehicles, technology

Introduction: The advent of autonomous vehicle technology marks a pivotal moment in the evolution of transportation systems. As vehicles become increasingly independent, the underlying neural network architectures play a critical role in ensuring reliable and safe operation. The complexity and dynamic nature of real-world environments require sophisticated neural models capable of rapid adaptation and learning. This paper reviews recent progress in neural network design, focusing on innovations that have enhanced autonomous vehicle performance. By examining the integration of advanced neural architectures in autonomous systems, we provide insights into future trends and challenges in the field.

References

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