An Open Approach to Autonomous Vehicles

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Abstract: *The evolution of autonomous vehicle (AV) technology is rapidly transforming the automotive industry, driving innovations in safety, efficiency, and user experience. This research paper explores the impact of open approaches on the development and deployment of autonomous vehicles. By leveraging open-source software and hardware platforms, such as OpenPilot and Apollo, the study highlights how collaborative, transparent methodologies foster innovation and accelerate technological advancements. The paper examines the technical, regulatory, and ethical challenges associated with open-source AV development, including data management, sensor integration, and compliance with safety standards. Through a comprehensive analysis of successful open-source projects and emerging trends, the research identifies the benefits of open approaches in promoting cross-disciplinary collaboration and addressing complex challenges. The findings underscore the potential of open-source solutions to drive the future of autonomous vehicle technology, offering insights into their role in shaping industry standards and regulatory frameworks*

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