****Paper Title:****

A Survey of Autonomous Driving: *Common Practices and Emerging Technologies*

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https://ieeexplore.ieee.org/document/9046805

****1 Summary****
****1.1 Motivation****

The research paper dives into the world of Automated Driving Systems (ADS), inspired by the urgent need to revolutionize transportation. The primary goal is to research breakthroughs, difficulties, and potential solutions in ADS technology. The report proposes that strong ADS could transform road safety and mobility through multidisciplinary collaboration and technical advancements.

****1.2 Contribution****

The paper significantly contributes by providing a comprehensive survey of ADS. It combines current knowledge and provides insights on perception, assessment, planning, human-machine interaction, and datasets/tools which helps to comprehend the existing ADS environment and future directions.

****1.3 Methodology****

The methodology involves an extensive literature review, meticulously extracting and organizing information from diverse sources. The paper takes a systematic approach, with slides covering essential topics including perception, evaluation, planning, human-machine interaction, datasets, frameworks, and simulators.

****1.4 Conclusion****

In conclusion, the paper underscores the promises and challenges within the ADS domain. Recent advancements in research provide promise for the future of automated driving technology, imagining safer and more efficient highways.

****2 Limitations****
****2.1 First Limitation****

A limitation is such that several components of ADS technology are still in their early stages of development. Robust automated driving poses challenges in urban settings, and accidents resulting from underdeveloped systems underscore the necessity for comprehensive inquiries.

2.2 Second Limitation

The second limitation concerns the challenges of transitioning from manual to automated driving, particularly in automation levels three and four. Effective handover procedures are difficult, and further study is needed to address this unsolved issue.

3 Synthesis

The concepts presented in the paper hold immense relevance to potential applications and future scopes in ADS. The synthesis encourages research in areas like robust handover mechanisms and human-machine interface modules by offering a path for improving technology and overcoming constraints. The paper aligns with the broader goal of ensuring that automated driving systems contribute to safer and more efficient roads