Special Issue

Emerging Research of Artificial Intelligence in Autonomous Vehicles: Balancing Innovation with Safety and Acceptability

Message from the Guest Editors

AI-enabled systems are being integrated into all functions of driver assistance systems and autonomous vehicles, including perception, localization, decision-making, behavior generation, and vehicle control. Moreover, their application extends to verification and validation processes, ensuring that these vehicles can operate safely.

However, focusing solely on vehicle-centered approaches is not enough for the widespread adoption of autonomous vehicles; we must consider the entire autonomous vehicle ecosystem and all its stakeholders. This necessitates a system-of-systems approach that encompasses not only the whole vehicle but also its environment and ecosystem.

The introduction of data-driven AI solutions adds another layer of complexity to already intricate systems. For instance, LLMs are primarily associative solutions with limited causality, raising concerns about the trustworthiness of systems based on such models.

This Special Issue aims to bridge the gap by exploring AI-enabled systems that address the complexities of the operating environments where driving assistance systems and autonomous vehicles will be deployed.

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As the world of science becomes ever more specialized, researchers may lose themselves in the deep forest of the ever increasing number of subfields being created. This open access journal Applied Sciences has been started to link these subfields, so researchers can cut through the forest and see the surrounding, or quite distant fields and subfields to help develop his/her own research even further with the aid of this multi-dimensional network.

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