

Special Issue

Safety and Security of AI in Autonomous Driving

Message from the Guest Editors

Safety and security are significant enablers for self-driving vehicles and the future of transportation. Any security issues in these complex machines can lead to a safety-critical event, such as a life-threatening accident. As a result, there is an urgent need to develop algorithms and tools that can evaluate their system and security. Developing a safe and secure self-driving car requires extensive knowledge in a variety of aspects, including, but not limited to, safety, security, perception, localization, control, path planning, prediction, sensing, etc. Furthermore, the recent increase in the use of Artificial Intelligence (AI) in self-driving technologies opens up a broad field of research with tremendous progress in addressing the fundamental challenges of ensuring their safety and security. For autonomous driving technologies, these topics include, but are not limited to, the following:

- Safety and security analysis of self-driving cars;
- Safe and secure path prediction and planning;
- Safe and secure localization;
- Safe and secure object detection and classification;
- Sensor spoofing detection and mitigations;
- Safe and secure machine learning.

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