Navigation Filters for Autonomous Vehicles

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Message from the Guest Editors

Though there are various application of linear filters, practical real-world challenges related to autonomous vehicles often involve nonlinear systems. Nonlinearities may arise either from the dynamics of autonomous vehicles or even from the process of sensors' observation. As a fundamental problem of nonlinear filtering encountered across a few research areas, Bayesian analysis has stimulated a sustaining interest during the past decades and it provides a powerful framework for nonlinear state estimation of autonomous vehicles.

The goal of this special issue is to present novel results and trends in the field of nonlinear filtering by integrating concepts for autonomous vehicles from nonlinear filtering, machine learning and information theory (data fusion). This special issue is addressed to all types of nonlinear filtering for autonomous vehicles.

Key words: integrated navigation, indoor positioning system, adaptive filter, nonlinear filtering, estimation theory, autonomous vehicles, autonomous driving, machine learning, sensor data fusion

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Message from the Editor-in-Chief

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