

# CALL FOR PAPERS

Journal of Advanced Transportation is a peer-reviewed international journal in transportation research which has been continuously published since 1979. As of 2017, it will be open access journal as a joint Wiley-Hindawi publication and hence all papers to be published in this special issue will be openly accessible.

Connected and autonomous vehicles (CAV) are a technological revolution in the making which combines radical changes in the design of road vehicles and also in understanding their interactions with the networked infrastructure of the modern society. The vehicles are acquiring different levels of autonomy, transforming human drivers into riders and goods transport into unmanned activity, whilst connected to the existing environment of wireless networks (cellular, Wi-Fi, and Internet) and the emerging environment of intelligent transportation system (roadside sensing and wireless data exchange), offering new technical, business, and societal vistas. The emergence of CAV adds a new dimension to the subject advanced transportation and motivates this special issue.

The technological challenges of the CAV revolution transcend the boundaries of automotive engineering and this special issue focuses on interpreting and analysing some of these challenges within the framework of cyber-physical systems. Cyber-physical systems (CPS) are engineered systems which have significant couplings between cyber (processing, communication, and network) and physical (sensing, actuation, and infrastructure) elements. These couplings result in dynamic coevolution of cyber and physical properties. The analysis and design of CPS involve the joint dynamics of computing, software, networks, and physical processes. In the CAV context, the physical domain is defined by dynamics of vehicle motion together with the dynamics of radio wave propagation whilst the cyber domain is defined by the data processing in the intra- and intervehicle networks together with the vehicle-to-infrastructure data exchange.

We invite authors to contribute original research articles as well as review articles which would address the following CAV-related topics from the CPS perspective.

The submitted manuscripts will be assessed with respect to their quality defined by the right balance of engineering realism, methodological rigour, and subject relevance. This special issue is open to contributions which are practical and theoretical or mix both practical and theoretical aspects. Authors from industry and academia are encouraged to submit their contributions which, if accepted, will be published as open access papers thus enabling their unlimited worldwide distribution.

Potential topics include but are not limited to the following:

- ▶ Autonomous situational awareness for perceiving both the external environment and in-vehicle health/wellness
- ▶ Modelling and analysis of joint dynamics of sensing, actuation, control, and networking
- ▶ Uncertainty definition, identification, propagation, and quantification
- ▶ Performance definition, measurement, and assessment
- ▶ Security algorithms, protocols, mechanisms, and architectures
- ▶ Methods for transportation network analysis

Authors can submit their manuscripts through the Manuscript Tracking System at <http://mts.hindawi.com/submit/journals/jat/cav/>.

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