

Call for Papers

IEEE Transactions on Human–Machine Systems

Special Issue on:

“Holistic approaches for Human-Vehicle Systems: combining models, interactions and control”

Ground vehicles operate in a complex human–vehicle–road environment involving numerous levels of interaction among drivers, vehicles, and the ambient within which they travel. Human drivers may be “intelligent controllers” that define the intended driving direction and/or operate (totally or partially) autonomous vehicles. To support the development of safe driver-vehicle interactions in an era of increasing automation, methods for modeling and analyzing the contribution of driver performance are critical and essential. This raises interesting challenges associated with the characterization and modeling of human behaviors, particularly with respect to cognition and neuromuscular dynamics, their implication in closed-loop driver–vehicle performance, and their induced modifications brought about by interaction with the surrounding environment. Specifically, holistic approaches are of interest, which aim at efficiently and quantitatively combine different aspects of the human-vehicle interaction in specific application domains.

This special issue focuses on these relevant driver-vehicle interaction topics, with attention paid to the range of vehicles and associated technology currently on the market and emerging in the era of increased automation.

The topics of interest include but are not limited to:

- Modeling and characterization of driver–vehicle interactions
- Human driver modeling: neuromuscular dynamics, skills and learning
- Advanced vehicle control systems with driver-in-the-loop
- Intelligent and cognitive vehicles
- Advanced driver assistance systems (ADAS)
- Modeling and characterization of human drivers’ errors
- Characterization and quantification of driver's capabilities

Important Dates:

Manuscript submission:	June 15, 2016
Completion of first round of reviews:	September 31, 2016
Revised manuscript submission:	November 31, 2016
Notification of final decision:	February 15, 2016
Final manuscript submission:	March 31, 2017

Paper should be submitted through <http://mc.manuscriptcentral.com/thms>, with a cover letter that contains the statement: “This manuscript is being submitted to the Special Issue: Modeling, Dynamics, Perception and Control of Human–Vehicle Systems”. For detailed submission information, please refer to “Information for Authors” at <http://iee-smc.org/publications/thms-info-for-authors.pdf>.

Guest Editors:

Mara Tanelli, Politecnico di Milano, Italy	mara.tanelli@polimi.it
Dongpu Cao, Cranfield University, United Kingdom	d.cao@cranfield.ac.uk
Rafael Toledo, Universidad Politécnica de Cartagena, Spain	rafael.toledo@upct.es
Laura Stanley, Montana State University–Bozeman, United States	laura.stanley@ie.montana.edu

All enquiries about the special issue should be sent to: mara.tanelli@polimi.it.