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Technical Committee on:

***Human Factors in Intelligent Vehicles
(HFIV)***

<http://hfiv.net>

TC Report

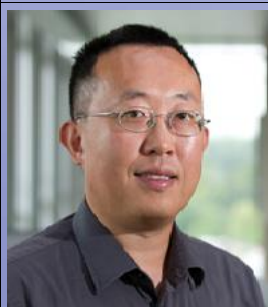
2019



Chair (corresponding chair):

Cristina Olaverri-Monreal

Cristina.Olaverri-Monreal@ieee.org



Co-Chairs: Renran Tian

rtian@iupui.edu

Organized Events and Activities

1. Conferences

Year	Conference name	Organizers & functions
2019	IEEE Intelligent Vehicles Symposium	Prof. Cristina Olaverri-Monreal, Program Co-Chair Prof. Fernando Garcia , Registration Chair
2019	IEEE Intelligent Transportation Systems Conference 19	Prof. Cristina Olaverri-Monreal, Special Sessions Chair Prof. Fernando Garcia , Co-Registration Chair
2019	2019 IEEE International Conference on Vehicular Electronics and Safety (ICVES 2019)	Prof. Fernando Garcia , General Co-Chair Prof. Cristina Olaverri-Monreal, Steering Committee

2. Workshops and Tutorials

Year	Workshop/tutorial title	At Conference	Organizers (TC members)	Participants (estimated #)
2019	Workshop on Human Factors in Intelligent Vehicles	IEEE IV2019	Cristina Olaverri Monreal, Fernando Garcia, Rencheng Zheng	75

3. Organized Sessions

Year	Invited/special technical session title	Conference Host	Organizers/ Moderator
2019	Special Session on Human Factors in Intelligent Vehicles	IEEE ITSC2019	Cristina Olaverri-Monreal / Fernando Garcia
2019	Workshop on Artificial Intelligence and Data Mining for Intelligent Transportation Systems and Smart Mobility	Eurocast, 2019	J. Sanchez-Medina, J. del Ser, E. I. Vlahogianni, F. García, C. Olaverri-Monreal, L. Acosta
2019	Session of Advanced Applications of Intelligent Systems	HCI International 2019	Renran Tian

2019	Performance Evaluation of Advanced Driver State Monitoring Systems	Purdue Road School	Renran Tian
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4. Special Issues in Journals or Editor of Other Publications

Year	Title	Journal / Book / Publishers	(Guest) Editor
2018-2019	Special Issue "Autonomous Vehicles Technology"	MDPI	Cristina Olaverri-Monreal, Alberto Díaz, José Eugenio Naranjo, Edgar Talavera
2019	Book on Human Factors in Intelligent Vehicles	River Publishers	Cristina Olaverri-Monreal, Fernando García, Rosaldo Rossetti
2019-2020	Special Issue "Autonomous Vehicles Technology"	MDPI	Fernando Garcia Fernadez, David Martín Gómez, Jose Maria Armingol

5. Book and Book chapters

Year	Title	Journal/ Publisher	Editors or Guest-Editors
2019	Olaverri-Monreal, C. (2019) "Road Safety: Human Factors Aspects of Intelligent Vehicle Technologies", Springer Nature Switzerland AG 2019 B. Donnellan et al. (Eds.): Smart Cities, Green Technologies, and Intelligent Transport Systems, pp. 318–332, 2019	Springer Nature	B. Donnellan et al.
2019	Braunauer, D., Kopica, F., Olaverri-Monreal, C. (2019) "Encouraging the Use of Sustainable Transport by a Tracking System for Bicycles", Artificial Intelligence and Data Mining for Intelligent Transportation Systems and Smart Mobility, EUROCAST 2019, Las Palmas de Gran Canaria, Canary Islands, Spain.	Moreno-Díaz et al. (eds) Part II Computer Aided Systems Theory–EUROCAST 2019. Springer LNCS	Moreno-Díaz, Roberto, Pichler, Franz, Quesada-Arencibia, Alexis (Eds.)
2019	Naz, E., Kopica, F., Olaverri-Monreal, C. (2019) "Smartphone versus On-Board Diagnostics (OBD) Data to Determine Driving Behavior", Artificial Intelligence and Data Mining for Intelligent	Moreno-Díaz et al. (eds) Part II Computer Aided Systems Theory–	Moreno-Díaz, Roberto, Pichler, Franz, Quesada-Arencibia, Alexis (Eds.)

Year	Title	Journal/ Publisher	Editors or Guest- Editors
	Transportation Systems and Smart Mobility, EUROCAST 2019, Las Palmas de Gran Canaria, Canary Islands, Spain.	EUROCAST 2019. Springer LNCS	
2019	Naz, E., Kopica, F., Olaverri-Monreal, C. (2019) "Smartphone versus On-Board Diagnostics (OBD) Data to Determine Driving Behavior", Artificial Intelligence and Data Mining for Intelligent Transportation Systems and Smart Mobility, EUROCAST 2019, Las Palmas de Gran Canarias, Canary Islands, Spain.	Moreno-Díaz et al. (eds) Part II Computer Aided Systems Theory–EUROCAST 2019. Springer LNCS	Moreno-Díaz, Roberto, Pichler, Franz, Quesada-Arencibia, Alexis (Eds.)
2019	Naz, E., Kopica, F., Olaverri-Monreal, C. (2019) "Smartphone versus On-Board Diagnostics (OBD) Data to Determine Driving Behavior", Artificial Intelligence and Data Mining for Intelligent Transportation Systems and Smart Mobility, EUROCAST 2019, Las Palmas de Gran Canarias, Canary Islands, Spain.	Moreno-Díaz et al. (eds) Part II Computer Aided Systems Theory–EUROCAST 2019. Springer LNCS	Moreno-Díaz, Roberto, Pichler, Franz, Quesada-Arencibia, Alexis (Eds.)
2019	F. Pizzati, M.Allodi, A. Barreda and F. Garcia . (2019) " Lane detection and classification using cascaded CNNs ", Artificial Intelligence and Data Mining for Intelligent Transportation Systems and Smart Mobility, EUROCAST 2019, Las Palmas de Gran Canarias, Canary Islands, Spain.	Moreno-Díaz et al. (eds) Part II Computer Aided Systems Theory–EUROCAST 2019. Springer LNCS	Moreno-Díaz, Roberto, Pichler, Franz, Quesada-Arencibia, Alexis (Eds.)
2019	F M. A. de Miguel, F. Garcia, J.M. Armingol y R. Encinar. (2019) " An autonomous vehicle research platform ", Artificial Intelligence and Data Mining for Intelligent Transportation Systems and Smart Mobility, EUROCAST 2019, Las Palmas de Gran Canarias, Canary Islands, Spain.	Moreno-Díaz et al. (eds) Part II Computer Aided Systems Theory–EUROCAST 2019. Springer LNCS	Moreno-Díaz, Roberto, Pichler, Franz, Quesada-Arencibia, Alexis (Eds.)

6. Organized Competitions

Year	Title	Object	Organizer
2019	ITSS PhD Awards		ITS Society, C. Olaverri-Monreal, Committee Member Fernando Garcia

			Committee Member
2019	Initiative to promote women on ITS		ITSC 2019, C. Olaverri-Monreal, chair committee

7. Other Activities (Publications)

- Morales-Alvarez, W., de Miguel M. A., Garcia, F., Olaverri-Monreal, C. (2019) "Response of Vulnerable Road Users to Visual Information from Autonomous Vehicles in Shared Spaces", *Proceedings IEEE ITSC 2019, Auckland, New Zealand*.
- Wöber, W., Aburaia M., Olaverri-Monreal, C. (2019) "Classification of Streetsigns Using Gaussian Process Latent Variable Models", *Proceedings 2019 IEEE International Conference on Connected Vehicles and Expo (ICCVE), Graz, Austria*.
- de Miguel, M. A., Fuchshuber, D., Hussein, A., Olaverri-Monreal, C. (2019) "Perceived Pedestrian Safety: Public Interaction with Driverless Vehicles", *Proceedings IEEE Intelligent Vehicles Symposium 2019, Paris, France*.
- Wöber, W., Tibihika, P. D., Olaverri-Monreal, C., Mehnen, L., Sykacek, P., Meimberg, H. (2019) "Comparison of Unsupervised Learning Methods for Natural Image Processing", *Biodiversity Information Science and Standards Conference*
- Díaz-Álvarez, A., Serradilla-Garcia, F., Jimenez-Alonso, F., Talavera-Muñoz, E. Olaverri-Monreal, C. (2019) "Fuzzy Controller Inference via Gradient Descent to Model the Longitudinal Behavior on Real Drivers", *Proceedings IEEE Intelligent Vehicles Symposium 2019, Paris, France*.
- Artal-Villa, L., Hussein, A., Olaverri-Monreal, C. (2019) "Extension of the 3DCoAutoSim to Simulate Vehicle and Pedestrian Interaction based on SUMO and Unity 3D", *Proceedings IEEE Intelligent Vehicles Symposium 2019, Paris, France*.
- Díaz-Álvarez, A., Talavera-Muñoz, E., Jiménez Alonso, F., Serradilla García, F., Olaverri-Monreal, C., San Juan Cervera, A. (2019) "Lane change behavior inference through deep-learning-based environment analysis", *Proceedings ITS Congress in Europe, Eindhoven, The Netherlands*.
- Artal-Villa, L., Olaverri-Monreal, C. (2019) "Vehicle-Pedestrian Interaction in SUMO and Unity3D", *Proceedings Worldcist 2019*
- Kopica, F., Morales, W. Olaverri-Monreal, C. (2019) "Automated delivery of shipments in urban areas", *6th International Physical Internet Conference, Church House, Westminster, London, United Kingdom*.
- Olaverri Monreal, C. (2019) "Intelligenter Transport" In "Krone der Wissenschaft" Kronenzeitung, issue 30/5/2015, page 36.
- Edric John Cruz Nacpil, Rencheng Zheng, Tsutomu Kaizuka, Kimihiko Nakano, (2019) A surface electromyography controlled steering assistance interface, *Journal of Intelligent and Connected Vehicles*, pp. 1-13, 2019. DOI 10.1108/JICV-11-2018-0011. (Journal)
- Edric John Cruz Nacpil, Zheng Wang, Rencheng Zheng, Tsutomu Kaizuka, Kimihiko Nakano, (2019) Design and Evaluation of a Surface Electromyography-Controlled Steering Assistance Interface, *Sensors*, vol. 19, no. 1308, pp. 1-20, 2019, DOI:10.3390/s19061308. (Journal)
- E Martí, M.A. de Miguel, F. Garcia and J. Perez. A Review of Sensor Technologies for Perception in Automated Driving. *Intelligent Transportation Systems Magazine*. Accepted, to be published.
- J. Beltrán, I. Cortés, A. Barrera, J. Urdiales, C. Guindel, F. Garcia, A. de la Escalera. A Method for Synthetic LiDAR Generation to Create Annotated Datasets for Autonomous Vehicles Perception". 2019 21st International Conference on Intelligent Transportation Systems (ITSC). Auckland, New Zealand 27-30 October 2019.
- J G Noya, A Al-Kaff, J Beltrán, F Garcia, G Fernandez. Traffic Sign Detection and 3D Localization via Deep Convolutional Neural Networks and Stereo Vision. 2019 21st International Conference on Intelligent Transportation Systems (ITSC). Auckland, New Zealand 27-30 October 2019.
- J G Noya, A Al-Kaff, J Beltrán, F Garcia, G Fernandez. Traffic Sign Detection and 3D Localization via Deep Convolutional Neural Networks and Stereo Vision .2019 21st International Conference on Intelligent Transportation Systems (ITSC). Auckland, New Zealand 27-30 October 2019.
- O. El-Sobky, F. Moreno, F. Garcia and J.M. Armingol. Hypergrid: A Hyper-Fast ROS-Based Framework for Local Map Generation. 2019 IEEE International Conference on Vehicular Electronics and Safety (ICVES), Cairo, Egypt 4-6 September 2019.

- A. Farag , A. Hussein , O. Shehata , F. Garcia, H. H. Tadjine , E. Matthes. Dynamics Platooning Model and Protocols for Self-Driving Vehicles. 2019 IEEE Intelligent Vehicles Symposium (IV'19). Paris, France. 8-12 June, 2019.
- F. Pizzati and F. Garcia . Enhanced Free Space Detection in Multiple Lanes Based on Single CNN with Scene Identification. 2019 IEEE Intelligent Vehicles Symposium (IV'19). Paris, France. 8-12 June, 2019.
- M. A. de Miguel, F. Garcia, J.M. Armingol y R. Encinar. An autonomous vehicle research platform .EUROCAST 2019. Las Palmas de Gran Canaria.17-22 February, 2019.
- Shen, D., Yi, Q., Li, L., Tian, R., Chien, S., Chen, Y., and Sherony, R., "Test Scenarios Development and Data Collection Methods for the Evaluation of Vehicle Road Departure Prevention Systems", IEEE Transactions on Intelligent Vehicles, vol. 4, no. 3, Sep 2019
- Tian, R., Ruan, K., Li, L., Le, J., Greener, J., and Barbat, S., "Standardized Evaluation of Camera-based Driver State Monitoring Systems", IEEE/CAA Journal of Automatica Sinica, vol. 6, no. 3, May 2019
- Tian, R., Chien, S., Chen, Y., and Sherony, R., "Pedestrian Moving Patterns during Potential Conflicts with 110 On-Road Driving Vehicles", HFES 2019, Seattle, Washington, October 28-November 1, 2019 (Accepted)
- Deng, Q., Le, J., Barbat, S., Tian, R., and Chen, Y., "Efficient living subject localization and weak vital-sign signal enhancement using impulse radio based UWB radar", IEEE International Conference on Intelligent Vehicles Symposium (IV'19), Paris, France, June 9 – 12, 2019
- Ruan, K., Yarmand, Z., Tian, R., Li, L., Chen, Y., Li, F., and Sturdevant, J., "Highway End-of-Queue Alerting System Based on Probe Vehicle Data", 21st International Conference on Human-Computer Interaction, Orlando, Florida, July 26 – 31, 2019
- Gandhi, P., Luo, X., and Tian, R., "Modeling Vehicle-Pedestrian Encountering Risks in the Natural Driving Environment using Machine Learning Algorithms", 21st International Conference on Human-Computer Interaction, Orlando, Florida, July 26 – 31, 2019

8. Other Activities (Invited Talks and Keynotes)

Key note: Olaverri-Monreal, C. (Nov 2019): Interaction with Vehicular Robots, 11th International Conference on Intelligent Robots and Systems (IROS 2019) The Venetian Macao, Macau, China.

Key note: Olaverri-Monreal, C. (Nov 2019): The Effect of Vehicle Automation on Road Safety , 11th IROS Workshop on Planning, Perception, Navigation for Intelligent Vehicle within the 2019 IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS 2019) The Venetian Macao, Macau, China.

Olaverri-Monreal, C. (Jun 2019) BMVIT /FFG „Erfolgreich durch Innovation, Neue Wege in der Transportwirtschaft und Logistik“

Olaverri-Monreal, C. (Jun 2019) BMVIT / FFG Podiumsdiskussion „Was nutzen Kooperationen in der Forschung, Technologie und Innovation einer zukunftsfähigen Transportlogistik“

Rencheng Zheng, (Aug.) Human-Machine interface in Automated Driving, in International Symposium on AI + 5G, Nanjing, China.

CALL FOR VOLUNTEERS:

Please, make a list of available positions for volunteers for the organization of the technical activities of this TC

Member of the technical activities committee