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Technical Committee on:

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

<http://hfiv.net>

TC Report

2018



Chair (corresponding chair):

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Co-Chairs: Renran Tian

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Organized Events and Activities

1. Conferences

Year	Conference name	Organizers & functions
2018	IEEE Intelligent Transportation Systems Conference 18	Dr. Cristina Olaverri Monreal, Tutorials Chair
2018	IEEE Intelligent Transportation Systems Conference 18	Dr. Fernando Garcia , Registration Chair
2018	IEEE 2nd IEEE International Conference on Smart City Invocations (IEEE SCI 2018)	Dr. Cristina Olaverri Monreal, Programm Chair
2018	2018 IEEE International Conference on Vehicular Electronics and Safety (ICVES 2018)	Dr. Fernando Garcia, General Chair

2. Workshops and Tutorials

Year	Workshop/tutorial title	At Conference	Organizers (TC members)	Participants (estimated #)
2018	Workshop on Human Factors in Intelligent Vehicles and Workshop on Human Machine Interfaces in Intelligent Vehicles	IEEE IV2018	Cristina Olaverri Monreal, Fernando Garcia, Rencheng Zheng	40
2018	ITSS Spanish Chapter Workshop	ICVES 2018	Fernando Garcia	20
2018	2018 International Workshop on Emerging Technology in Automotive Engineering	Independent Workshop	Rencheng Zheng	40

3. Organized Sessions

Year	Invited/special technical session title	Conference Host	Organizers/ Moderator
2018	Session on Human Factors in Intelligent Vehicles	IEEE ITSC2018	Cristina Olaverri Monreal / Fernando Garcia

4. Special Issues in Journals or Editor of Other Publications

Year	Title	Journal	(Guest) Editor
2018	Practical Sensing Techniques for Intelligent Vehicles	IEEE ITS Magazine	Fernando Garcia
2018	Special Issue on "2017 IEEE International Conference on Vehicular Electronics and Safety (ICVES'17)"	IEEE ITS Magazine	Cristina Olaverri-Monreal, Javier Sanchez-Medina,

			Fernando García-Fernández
2018	Knowledge Discovery from Mobility Data for Intelligent Transportation Systems	IEEE Transactions on Intelligent Vehicles	Luis Moreira-Matias, Cristina Olaverri Monreal, Joao Gama, Rahul Nair, Roberto Trasarti

5. Book and Book chapters

Year	Title	Journal/Publisher	Editors or Guest-Editors
2017	<p>Allamehzadeh, A., Aminian, M. S., Mostaed M., Olaverri-Monreal, C. (2018) "Automatic Vehicle Counting Approach through Computer Vision for Traffic Management", In: Moreno-Díaz et al. (eds) Part II Computer Aided Systems Theory– EUROCAST 2017. Springer LNCS volume 10672, pp. 1–8, 2018.</p> <p>Aminian, M. S., Allamehzadeh, A., Mostaed M., Olaverri-Monreal, C. (2018) "Cost-Efficient Traffic Sign Detection Relying on Smart Mobile Devices", In: Moreno-Díaz et al. (eds) Part II Computer Aided Systems Theory– EUROCAST 2017. Springer LNCS volume 10672, pp. 1–8, 2018.</p> <p>Çapalar, J., Nemeč, A., Zahradnik C., Olaverri-Monreal, C. (2018) "Optimization of Passenger Distribution at Metro Stations through a Guidance System", In: Moreno-Díaz et al. (eds) Part II Computer Aided Systems Theory– EUROCAST 2017. Springer LNCS volume 10672, pp. 1–8, 2018.</p> <p>Mostaed, M., Aldabas, K., Olaverri-Monreal, C. (2018) "V2V Communication System to Increase Driver Awareness of Emergency Vehicles", In: Moreno-Díaz et al. (eds) Part II Computer Aided Systems Theory– EUROCAST 2017. Springer LNCS volume 10672, pp. 1–6, 2018.</p>	<p>In: Moreno-Díaz et al. (eds) Part II Computer Aided Systems Theory– EUROCAST 2017. Springer LNCS volume 10672</p>	<p>Moreno-Díaz, Roberto, Pichler, Franz, Quesada-Arencibia, Alexis (Eds.)</p>

6. Organized Competitions

Year	Title	Object	Organizer
2018	ITSS PhD Awards		ITS Society, C. Olaverri Committee Member

2018	Initiative to promote women on ITS		ITSC 2018, C. Olaverri, organization committee
2018	Best Thesis dissertation in ITS in Spain, by the Spanish Chapter	To acknowledge the development of high quality theis with the field of ITS in Spain	Spanish IEEE-ITSS Chapter (Dr. Fernando Garcia, is the vice-president)

7. Other Activities (Publications)

Armingol, J.M., Olaverri-Monreal, C., García, F., Milanés, V., Martín, D. (2018) "Cooperative Systems for Autonomous Vehicles", Journal of Advanced Transportation, Hindawi Publishing Corporation, Volume 2018, Article ID 8714549.

Validi, A., Ludwig, T., Hussein, A., Olaverri-Monreal, C. (2018) "Examining the Impact on Road Safety of Different Penetration Rates of Vehicle-to-Vehicle Communication and Adaptive Cruise Control", IEEE Intelligent Transportation Systems Magazine

Olaverri-Monreal, C., Errea-Moreno, J., Diaz-Alvarez, A. (2018) "Implementation and Evaluation of a Traffic Light Assistance System in a Simulation Framework based on V2I Communication", Journal of Advanced Transportation, Special Issue "Cooperative Systems for Autonomous Vehicles" (CSAV), Hindawi Publishing Corporation.

Olaverri-Monreal, C., Krizek, G. C., Michaeler, F., Lorenz, R., Pichler, M. (2018) "Collaborative Approach for a Safe Driving Distance Using Stereoscopic Image Processing", Future Generation Computer Systems Journal. Special Issue on "Advanced Technologies and Systems for collaboration".

Hussein, A., Diaz-Alvarez, A., Armingol, J. M., and Olaverri-Monreal, C. (2018) "3DCoAutoSim: Simulator for Cooperative ADAS and Automated Vehicles", Proceedings 21st International IEEE Conference on Intelligent Transportation Systems, ITSC2018, Hawaii, November 2018.

Hussein, A., Garcia, F. and Olaverri-Monreal, C. (2018) "ROS and Unity Based Framework for Intelligent Vehicles Control and Simulation", Proceedings 2018 IEEE International Conference on Vehicular Electronics and Safety, ICVES2018, September 12-14, 2018 Madrid, Spain.

Ferreira, A., Brändle, N., Widhalm, P., Olaverri-Monreal, C. (2018)"Assessment of trip validation interfaces for smartphone-based travel surveys", ScienceDirect, Transportation Research Procedia 00 (2018) 000–000, Elsevier, 2018.

Olaverri-Monreal, C., Kumar, S., Diaz-Alvarez, A. (2018) "Automated Driving: Interactive Automation Control System to Enhance Situational Awareness in Conditional Automation", Proceedings IEEE Intelligent Vehicles Symposium 2018, Changshu, China.

Morales-Alvarez, W., Gomez-Silva, M. J., Fernandez-Lopez, G., Garcia-Fernandez, F., Olaverri-Monreal, C. (2018) "Automatic Analysis of Pedestrian's Body Language in the Interaction with Autonomous Vehicles", Proceedings IEEE Intelligent Vehicles Symposium 2018, Changshu, China.

A Hussein, F. Garcia , P.M. Plaza and J.M Armingol, "Hybrid optimization-based approach for multiple intelligent vehicles requests allocation". Journal of Advanced Transportation , Vol 2018, pages 11, March 2018.

A. Al-Kaff, D. Martín, F. García, A. de la Escalera, J.M Armingol, "Survey of Computer Vision Algorithms and Applications for Unmanned Aerial Vehicles Expert Systems with Applications ", Vol. 92, pp: 447-463. Feb. 2018. ISSN: 0957-4174 -- DOI: <https://doi.org/10.1016/j.eswa.2017.09.033>.

F. García, A. Prioletti, P. Cerri, A. Broggi, "PHD filter for vehicle tracking based on a monocular camera".: Expert Systems with Applications, Vol. 91, pp 472-479. Jan 2018. ISSN: 0197-6729 -- DOI : <https://doi.org/10.1155/2018/2493401>

Beltran, C. Guindel, D. Cruzado, F.M. Moreno, A. de la Escalera & F. Garcia . "BirdNet: a 3D Object Detection Framework from LiDAR information". 21st IEEE International Conference on Intelligent Transportation Systems (IEEE ITSC 2018). Maui, Hawaii, USA. 4-7th October 2018.

B. Abidi, F.M. Moreno, M. El Haziti, A. Hussein, A. Al Kaff, D.M. Gomez & F. Garcia. "Hybrid V2X Communication Approach using WiFi and 4G Connections". 2018 IEEE International Conference on Vehicular Electronics and Safety (ICVES).12-14th Sept. 2018.

M. Osman, A. Hussein, A. Al-Kaff, F. Garcia & J.M Armingol. "Online Adaptive Covariance Estimation Approach for Multiple Odometry Sensors Fusion.".2018 IEEE Intelligent Vehicles Symposium (IV'18). 26th-30th June, 2018

Antonin Joly, Rencheng Zheng, Kimihiko Nakano, "Driver response to steering perturbations: mechanical arm admittance and driving performances", International Journal of Human Factors Modelling and Simulation, vol. 6, no. 1, pp. 65-80, 2018.

Yunshun Zhang, Rencheng Zheng, Kimihiko Nakano, and Matthew P. Cartmell, "Stabilising high energy orbit oscillations by the utilisation of centrifugal effects for rotating-tyre-induced energy harvesting", Applied Physics Letter, 112, 143901, 2018.

Zheng Wang, Rencheng Zheng, Tsutomu Kaizuka, and Kimihiko Nakano, "Influence of haptic guidance on driving behaviour under degraded visual feedback conditions", IET Intelligent Transport Systems, pp. 1-11, 2018, DOI: 10.1049/iet-its.2017.0112.

H. Hu, Z. Gao, Y. Sheng, F. Gao, R. Zheng, X. Mei, J. Zhang, "A Biosignal Based Driving Experiment Analysis for Curved Road : An Initial Implementation", 2018 IEEE Intelligent Vehicles Symposium (IV'18). 26th-30th June, 2018.

B. Yang, R. Zheng, T. Kaizuka, K. Nakano, "Analysis of Driver Behaviors While Using In-Vehicle Traffic Light with Partial Development of V2I Communication", 2018 IEEE Intelligent Vehicles Symposium (IV'18). 26th-30th June, 2018.

Z. Wang, R. Zheng, T. Kaizuka, K. Nakano, "Driver-Automation Shared Control: Modeling Driver Behavior By Taking Account of Reliance on Haptic Guidance Steering", 2018 IEEE Intelligent Vehicles Symposium (IV'18). 26th-30th June, 2018.

K. Yang, R. Zheng, X. Ji, Y. Nishimura, K. Ando, "Applicaiton of Stackelberg Game Theory for Shared Steering Torque Control in Lane Change Maneuver", 2018 IEEE Intelligent Vehicles Symposium (IV'18). 26th-30th June, 2018.

H. Hu, Z. Zhu, Z. Gao, R. Zheng, "Analysis on Biosignal Characteristics to Evaluate Road Rage of Young Driver : A Driving Simulator Study", 2018 IEEE Intelligent Vehicles Symposium (IV'18). 26th-30th June, 2018.

Shen, D., Yi, Q., Lin, J., Tian, R., Chien, S., and Sherony, R., "Roadside Boundaries and Objects for the Development of Vehicle Road Keeping Assistance System," SAE Technical Paper 2018-01-0508, 2018

Deng, Q., Tian, R., Chen, Y., and Li, K., "Skeleton Model Based Behavior Recognition for Pedestrians and Cyclists from Vehicle Scene Camera", In 29th IEEE International Conference on Intelligent Vehicles Symposium, Changshu, Suzhou, China, June, 2018

8. Other Activities (Invited Talks and Keynotes)

Olaverri-Monreal, C. (Nov. 2018): "Connected and Automated Vehicles for an Efficient Transport", International Forum (PAMS 2018 Forum) on autonomous driving, Gyeonggi-do, Republic of Korea

Key note: Olaverri-Monreal, C. (Sept 2018): 2018 IEEE International Conference on Vehicular Electronics and Safety (ICVES), Plenary session, September 12-14, 2018, Madrid, Spain. ICVES 2018

Olaverri-Monreal, C. (May. 2018): "Human Factors in Automated Driving: Impact of Automated Vehicles on Road Users", Grazer Nutzfahrzeug Workshop, Graz University of Technology. NFZ Workshop

Olaverri-Monreal, C. (Apr. 2018): "Virtual Reality Use in Intelligent Vehicles", Start me up Monday. UAS Technikum Wien.

Olaverri-Monreal, C. (Mar. 2018): "Sustainable Transport: Intelligent Technologies and Physical Internet", Johannes Kepler University - JKU, Linz

Rencheng Zheng (Jul. 2018) : "Experimental Study of Human Factors in Automatic Platoon of Trucks ", The 8th COTA International Conference of Transportation Professionails (CICTP 2018), Beijing, China.

Tian, R., and Chen, Y., "TASI 110-Car Naturalistic Driving Study: Implications to Vehicle-pedestrian Crash Test Scenarios", In 97th Transportation Research Board Annual Meeting, January 7-11, Washington DC, 2018

Tian, R., Chen, Y., and Good, D., "Vehicle-Pedestrian Encountering Scenarios and Pedestrian Behavior Recognition in Naturalistic Driving Environment", in the 5th Workshop on Naturalistic Driving Data Analytics, 29th IEEE International Conference on Intelligent Vehicles Symposium, Changshu, Suzhou, China, June, 2018

9. **Other Activities (Guest lectures and summer schools)**

Olaverri-Monreal, C. Summer School on Cooperative Interactive Vehicles, "HMI and Human Factors" CIV2018 Loire Valley, France.

Rencheng Zheng, Summer School for Ungraduated Students, "Guidance for Emerging Automotive Technology", July 16-27, 2018, Dalian University of Technology, Dalian, China.

10. **Other Activities (Awards)**

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