IEEE CRFID Technical Committee on Motion Capture & Localization

Special Issue on "RFID Sensor Fusion for Navigation of Robots and Vehicles"

Robots, forklifts and autonomous vehicles are truly becoming more and more pervasive in several areas of life and work. To name a few, logistics, retails, smart warehouses but also ambient assisted living, human-robot collaboration, safety and so on. Advantages are countless with a positive impact on daily life for people and workers.

Any autonomous vehicle is a complex and harmonized set of sensors and technologies to pursue navigation and more. Encoders, Inertial Measurement Units (IMUs), cameras, ultrasounds, laser range finder and Radio Frequency Identification (RFID) system typically appear on board. They can be employed for standalone capabilities, but *sensor-fusion* and *data fusion* are preferably implemented. Combinations are innumerable with pros and cons mainly dependent on the application scenario. If the RFID technology was firstly used to add inventory feature to the vehicle, e.g. RFID robots, RFID forklifts, etc., its capabilities to contribute to tracking and navigation begin to be more and more explored and adopted.

Many open problems and challenges have to be faced to achieve the reliability and accuracy required for self-navigating vehicles, especially in dynamic environment where also people are.

This special issue will collect works from different academic researchers and industry engineers to discern the state of the art in this emerging field. Current and future trends in the use of *sensor-fusion* methods also exploiting Artificial Intelligence and Machine Learning will be explored for development, applicability, and performance improvement of autonomous vehicles in many society and industry applications.

Topics include, but are not limited to, the following:

- Sensor Fusion for Autonomous Vehicles
- RFID Sensor Fusion
- Robot tracking and navigation
- Emerging autonomous vehicles
- Artificial Intelligence for RFID enabled Autonomous Vehicles
- Navigation Techniques and Applications
- Dynamic Object Following

- Sensors for robots
- Vehicles for Industry 4.0
- Hybrid Methods
- RF Vehicles in IoT applications
- Vehicles for Smart City
- Vehicles for Smart Agrifood and Smart Agriculture
- Vehicles for Smart Warehouses

Important Dates:

Submission Deadline: December 1, 2022
First Review Due: January 15, 2023
Revision Due: February 15, 2023

Second Review Due: March 15, 2023
Final Manuscript Due: April 15, 2023
Publication Date: June 2023

Submission Guidelines: Authors are requested to electronically submit their original manuscripts through the IEEE Manuscript Central at https://mc.manuscriptcentral.com/jrfid, according to the format described at https://journals.ieeeauthorcenter.ieee.org/. The manuscript type for this special issue is "MoCap-2023".

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