

## **Title of Special Session:**

### **Embedded Real Time Perception and Low Cost Applications.**

#### **Abstract:**

Today, the computing power available on low cost electronic devices as Raspberry PI4, and Nvidia Jetson Nano is sufficient to implement Real Time Perception System which are integrated on applications.

The goal of this special session is to focus on :

- the realized or potential applications as mobile robotics (AGV, domestic autonomous robots), toward domestic robots and uses etc ;
- the benchmarks of the available electronic devices for Perception applications ;
- the sensors : RGB or RGB-D camera, stereo camera, lidar, and their fusion ;
- the fast perception algorithms and their implementation : CPU/GPU (cuda, OpenCL) ;
- OpenCV and other softwares : basic functionalities : how to use and to improve them.

**Keywords:** Real Time Embedded Perception System, Applications, Electronic Devices, Sensors, Algorithms and Software.

#### **Name of Organizers, Affiliation, email addresses & Short Bio:**

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## Patrick Bonnin short biography



Patrick J Bonnin is actually Professor at ISTE (Institut des Sciences et Techniques de Versailles), Engineering School of the University of Versailles Saint Quentin, associated to Paris Saclay University. He was Head of the Electronic Embedded Systems Department from September 2015 to August 2022, previously Head of Mechatronic Department from September 2009 to August 2015, and Researcher at Laboratory of Engineering Systems of Versailles. His fields of interest are: Robotic Vision, Real Time Embedded Vision, Real Time Implementation of Image Processing Algorithms, Edge / Region / Motion Color Segmentation, Robust Algorithms (lighting conditions), Algorithms without parameter. He participated to several RoboCup competition edition, and his team was world champion in 1999, second in 1998 and 2000 in the "legged robot" category using AIBO robots from Sony. He was born in Choisy le Roi, France in 1961, received his PHD in 1991, from Paris VI University in the field of Image Processing, and his "Habilitation à Diriger les Recherches" from Versailles University in 2000, in the field of Vision for Robotics.