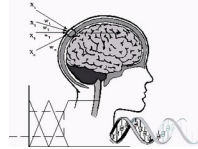




# International

Innovation in Knowledge Based and Intelligent  
Engineering Systems



## INVITED SESSION SUMMARY

### Title of Session:

Intelligent Vision Systems Based on Machine Learning

### Name of Chair:

Chair: Dr. Laura Falaschetti,  
Department of Information Engineering, Università Politecnica delle Marche, Ancona, Italy

Co-Chair: Prof. Claudio Turchetti,  
Department of Information Engineering, Università Politecnica delle Marche, Ancona, Italy

### Details of Session:

In recent years, intelligent vision systems based on machine and deep learning techniques are rapidly gaining increasing interest compared with systems based on traditional image processing methods.

Computer vision based on machine learning and deep learning techniques has become of paramount importance in computer science research and it has proven to be extremely useful to solve a large variety of tasks (image classification, semantic segmentation, object detection) in several real-world applications and consequently to develop intelligent vision systems (in mobile, cloud, fog, and embedded systems) for such applications.

A number of fields benefit from this approach, to name a few: in autonomous driving, both smart vehicles and smart robots, to help deep understanding of scene, objects and human; in industry to detect anomaly detection; in agriculture for plant diseases recognition; in early warning systems for early identification to predict natural disasters or other alert situations; in medical imaging for automatic computer-aided-diagnosis systems for early detection/classification of diseases and healthcare applications.

This session aims to present original research articles that cover recent advances in the theory and application of machine learning for intelligent vision systems.

The topics of interests include but are not limited to:

- Machine learning and deep learning for image processing (image classification, object detection and semantic segmentation);
- Machine learning image-based applications on embedded systems;
- Machine learning for edge computation on image sensors;
- Deep learning model compression and acceleration applied to images;
- Intelligent vision systems for smart vehicles;
- Intelligent vision systems for smart robots;

- Visual SLAM Applications;
- Intelligent vision systems for industry;
- Intelligent vision systems for smart agriculture;
- Intelligent vision systems for early warning systems;
- Deep neural networks for biomedical image processing;
- Machine learning methods for computer-aided diagnosis by image processing;
- Machine learning image-based healthcare applications.

**Website URL (if any):**

**Email & Contact Details:**

Dr. Laura Falaschetti: [l.falaschetti@univpm.it](mailto:l.falaschetti@univpm.it)

DII – Department of Information Engineering, Università Politecnica delle Marche  
Via Brecce Bianche, 12  
60131 Ancona (AN), ITALY

Prof. Claudio Turchetti: [c.turchetti@univpm.it](mailto:c.turchetti@univpm.it)

DII – Department of Information Engineering, Università Politecnica delle Marche  
Via Brecce Bianche, 12  
60131 Ancona (AN), ITALY

**Important Dates:**

- Paper submission: [20 February 2023](#)
- Notification of acceptance: [27 February 2023](#)
- Camera ready papers submission: [06 March 2023](#)