7th European Machine Vision Forum
(EMVF)

November 7 - 8, 2024
École Nationale Supérieure d'Ingenieurs Sud Alsace (ENSISA)
Université de Haute-Alsace (UHA)
Mulhouse, France

Share your expertise on the focal topic:

Challenges and Chances in Computer Vision for Human-Machine Interaction

Machine vision is often applied to solve challenges in automation, where it is superior to humans with respect to speed and reproducibility, for instance. However, machine vision is also a promising approach to enable the interaction between humans and machines, thus offering new opportunities of combined human-machine systems, e.g. for mixed manipulation setups in production. In this context, several challenges of human-machine interaction must be addressed, for example:

- Which sensor setup (e.g., cameras, illumination, and their spatial arrangement) is optimal for observing human actions?
- What methods are needed to process and evaluate the acquired image data in a proper way (e.g., detection, measurement, classification, or scene interpretation methods)?
- How good is the obtained information on human action (e.g., for detection and classification rates, reproducibility, measurement uncertainty, and susceptibility to disturbances)?

Within human-machine interaction, many aspects are relevant to obtaining a well-designed machine vision solution. Among others, the following issues may be of interest:

- Image-based sensor systems for capturing human activities.
- Unconventional vision technology (e.g., light-field imaging) for human-machine interfaces.
- Approaches and methods for describing human activity features.
- Machine learning algorithms for detecting and classifying human actions.
- Combining machine learning with human decision.
- Soft- and hardware architectures for human-machine interaction (e.g., cloud and edge computing systems, CPU, GPU, and FPGA-based systems).
- Design of appropriate user interfaces for machine vision systems.
- Machine vision solutions on mobile devices.
- Applications in automation, automotive, sports science, medicine, etc.
- System interfaces for providing humans with feedback from the machine vision systems (e.g., using augmented reality, light-field displays).

You are invited to share your expertise and valuable contribution to this focal topic in person. To actively contribute to the forum, please submit an extended abstract (1-2 pages) for

- Contributed talks (15 minutes presentation + 5 minutes discussion)
- Posters with "1 min, 2 slides"-teaser before corresponding poster session

via this **Application Form**.
Contributions from companies as well as research institutions are welcomed at the forum

All submissions are openly reviewed by the joint Scientific and Industrial Advisory Board of the forum.

Prof. Dr. Michael Heizmann, Director of the Institute of Industrial Information Technology, Karlsruhe Institute of Technology (KIT), Karlsruhe, Germany, and Chair of the *European Machine Vision Forum* will be pleased to welcome you to the 7th edition of EMVA's '**Research Meets Industry**' initiative.

Requested Submission Details

- The extended abstract (1-2 pages PDF file) must include in the following order
- Title of contribution
- Authors and their affiliation
- Extended abstract, at least one page, at most two pages; it can but need not include graphics, pictures, and references.