Call for Contributions

6th European Machine Vision Forum
(EMVF)

October 12-13, 2023,
Omnia Dialogue Centre
Wageningen, The Netherlands.

Share your expertise on the focal topic:

Real-world machine vision challenges –
coping with variability and uncontrolled environments

Machine vision solutions provide great value to end-users, but also must function well in real-world environments like agriculture, environmental monitoring, industrial and medical applications. Depending on the application at hand, specific challenges arise which concern the variability of the vision task as well as possible disturbances or operational conditions, for example:

- Large varieties of disturbances (e.g., vibrations, motion in the scene, variable illumination, ambient light variations of the background)
- Variations of the objects to be inspected (high inter-class variability, e.g. for fruits), which may lead to insufficient training data for machine learning
- Unknown camera poses (e.g., for moving imaging platforms)

In consequence, real-world machine vision systems must be able to deal with such undesired variability. Several approaches are conceivable to address the issues:

- How can machine vision system (hardware and software) be designed to be independent of unwanted variation and external influences?
- What hardware combinations (including imaging sensors) are robust to a large variety of disturbances or interference?
- What preprocessing and evaluation methods are suitable to deal with such variabilities and disturbances?
- How can machine learning be used and adapted in such cases?
- Can simulations be used to model the physics of real-world scenarios?
- What is the trade-off between robustness and accuracy?
- How can the reliability of machine vision systems be assessed and specified when variabilities and disturbances are present?

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-minute presentation + 5 minute discussion)
- Posters with "1 min, 2 slides"-teaser before corresponding poster session

no later than May 2nd, 2023, 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 6th edition of EMVA's '**Research Meets Industry**' initiative.

Requested Submission Details

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