

# IEEE/ASME International Conference on Advanced Intelligent Mechatronics (AIM2018)

Invited session on

## *AI-enabled Intelligent Systems in Smart Manufacturing and Automation*

In the area of industry and automation, machine vision has played an important role in constructing automated systems. For example, inspection tasks in industrial process lines, applications of automated systems, and object tracking during processes. The systems perform better when they are introduced with machine vision techniques. Recently, with the fast progression of artificial intelligence, more advanced algorithms have been developed and dedicated to machine vision. Nevertheless, the application scenarios are quite different from ideal scenarios of which algorithms are built. Furthermore, the domain of datasets in manufacturing and automation are usual different from the available open-source datasets. As such, it is found that further development and detailed investigation are still needed to fill the gap between indoor experiments and real-world implementations, as well as the differences across the domain of datasets. How to apply artificial intelligence algorithms in manufacturing and automated systems requires frontier ideas, interdisciplinary collaboration and various techniques. Therefore, this session would like to invite experts all around the world to show case successful examples of applying artificial intelligence algorithms on machine vision systems, especially in intelligent manufacturing and automation. Through this session, many organizations would benefit from the presentations of various AI applications.

### **Potential topics include but are not limited to the following:**

- Machine vision for automation and robotic systems
- Object tracking in manufacturing
- Design of intelligent mechatronics
- Intelligent frameworks in industrial applications
- Anomaly detection in industrial applications
- Automated optical inspection
- Artificial intelligence in automated optical inspection
- Smart manufacturing and inspection systems

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