

ARCAI 2026 Special Sessions Proposal Form

Format: Maximum 4 pages. All pages are formatted to letter paper size with margins of one inch on every side. All texts use single space, Times New Roman, and a font size of 11.

Success of SS: At least 6 accepted & registered papers with authors from at least 2 independent institutions (other than the organizers institutions) should be required for each SS.

Submission: This form should be submitted to icarcai.info@gmail.com once completed.

Special Session on “Industrial intelligent defect detection”

Organized by

Principal Organizer(s): *(He Zhao, Hefei University of Technology, z2110304@163.com.*

Xiangkai Shen, Beihang University, sxiangkai@163.com

Lei Wang, Shanghai University, wlei1316@163.com)

➤ Technical Outline of the Session and Topics (100-150 words):

Outline of the Session

This session focuses on intelligent defect detection for industrial inspection, covering advanced detection models, practical challenges, deployable algorithms, and future trends toward reliable, real-time, and interpretable inspection systems.

Topics of the Session

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- o Advanced image-based and signal-based methods for industrial defect detection.
- o Deep learning, intelligent sensing, and robust modeling under complex inspection conditions.
- o Practical challenges, including small defects, class imbalance, noisy labels, limited samples, and complex backgrounds.
- o Lightweight and real-time algorithms for inspection equipment, mobile platforms, and robotic systems.
- o Future directions, including multimodal sensing, interpretable artificial intelligence, edge computing, and intelligent maintenance.

key topics

Industrial defect detection, intelligent sensing, noisy-label learning, small defect detection, lightweight models, real-time deployment, robotic inspection, multimodal sensing.