

How Cobots and Artificial Intelligence are Transforming Welding Automation

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Across all industrial sectors, welding is a critical enabling technology that faces chronic skilled labour shortages. Modern automation technologies are now filling the gaps of welder availability in a safe, reliable fashion. This presentation will explore the evolution of automation technologies, the integration of modern collaborative robots (cobots), and the innovative use of artificial intelligence (AI) and Machine Learning for industrial welding applications.

A holistic approach to automating welding and fabrication processes is critical for maximizing best practices and mitigating pitfalls on the path to success. The skilled workforce has a critical role and is essential for successful implementation of welding automation technologies. This presentation will explore how a welding cobot is different versus traditional automation cells and why this allows the workforce to safely work alongside the cobot to enhance productivity and safety in parallel. The importance of non-arc fabrication activities such as material preparation, fit-up and handling will be explored. The ‘Smartisation’ of welding via rapid adoption of AI and Machine Learning will demonstrate that these game-changer technologies are transforming modern approaches to fabrication. Case studies that illustrate the use of these novel technologies will be presented and demonstrate how Cobots and AI are enhancing productivity while improving weld quality and lowering repair rates on the shop floor.