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South Western and South Wales Branch talk

When 24 Oct 2023
7:00 PM (UK Time)
Location Online (Microsoft Teams)

Registration is closed

Sensor Enabled Robotic Strategy for Automated Defect Free Pass High Integrity Welding

This is a South Western Branch event organised and run by our South Western Branch for our South West and South Wales. Other members and non-members are welcome to join us.

Overview: The presentation will cover novel developments around a compact, autonomous, and flexible robot system designed to perform multi-pass welding in confined spaces. Optical and tactile sensing are utilized to detect and autonomously extract the feature characteristics of single-sided V-groove geometries while robotic motion is sensor-driven allowing the generation and adaption of the welding paths to varying V-groove geometries and the specimens. An adaptive fill sequencing framework is presented, enabling automatic planning of multi-pass single-sided V-groove geometries. Driven with commercial aspects in mind, a novel cost-function concept has been developed to identify the optimum welding parameters for each welding layer through a user-driven weightings of the optimum combination of the number of passes, filler material and welding arc time based on application. The concept methodology and framework were verified experimentally, through automated robotically deployed Gas Metal Arc Welding (GMAW) developed system.

Speaker:- Charalampos (Harris) Loukas (Research Associate, Strathclyde University)

Speaker Biography:- Dr. Charalampos Loukas is an Electrical & Computer Engineer and currently a Research Associate for the Sensor Enabled Automation Robotics & Control Hub (SEARCH) at the University of Strathclyde. He holds a PhD in Holistic & Adaptive Robotic Welding with Babcock International Group PLC. Having built a strong skill set in sensor-enabled high-integrity welding and real-time robotic control for metrology inspection, he is looking forward to the growth of the heavy manufacturing sector. His research interests include sensor-enabled robotic automation, inspection of high value manufacturing assets, computer vision, real-time control of arc-welding processes, and machine learning techniques for industrial automation.

Continuing Professional Development (CPD): Attending this event supports your professional development. You can claim 2 CPD points per hour for this event. As a member of the Welding Institute you can record your CPD points from your membership portal.

Additional Information:

- Registration for this event will close 24 hours before the start.
- Live event only
- Registration details may be shared with our volunteers to help facilitate the event.

The Welding Institute

Granta Park, Great Abington, Cambridge CB21 6AL, UK

+44 (0)1223 899000

theweldinginstitute@twi.co.uk

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