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2024



International Industrial Revolution 4.0 Exposition

"INNOVATING IDEAS, TRANSPIRING DREAMS"

ABSTRACT BOOK

Strategic Partners:



Perpustakaan
Sultan Badlishah

Organized By:

**COLLEGE OF COMPUTING, INFORMATICS AND MATHEMATICS,
UNIVERSITI TEKNOLOGI MARA, KEDAH BRANCH**

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IREx 2024

The successful inauguration of IR4.0 Exposition IREx 2019 has witnessed ground breaking initiatives, ideas, and innovations materialised into numerous practical devices today. Treading on the same triumph, the College of Computing, Informatics, and Mathematics, UiTM Kedah is thrilled to announce the continuation of said event, IREx 2024 with the theme: *Innovating Ideas, Transpiring Dreams*.

The IREx 2024 aspires to incorporate even more exciting new technologies including, but not limited to, Information & Communication Technology (ICT), Educational Technology & Innovation (ED), Operational Excellence (OE), Internet of Things (IoT), Process Improvement, Ideas & Design, Multimedia, and Electronics that will chart new milestones in human history. This will serve as an excellent platform for scientists and innovators alike to meet the like-minded individuals and showcase inspiring ideas and notable innovations.

PROGRAM SCHEDULE

International Industrial Revolution 4.0 Exposition (IREx 2024)
21ST May 2024 (Tuesday)
Dewan Perdana, UiTM Kedah Branch

TIME	EVENT
8.00 – 9.00 am	Registration & Booth Set Up
9.00 am – 12.00 pm	Exhibition & Judging Session
12.00 pm – 2.00 pm	Obedient Drone Session & Break
2.00 pm – 5.00 pm	Official Closing & Prize Giving Ceremony
5.00 pm	Program Ends

Official Closing Ceremony

International Industrial Revolution 4.0 Exposition (IREx 2024)

TIME	EVENT
2.00 pm	Arrival of Guests and Participants
2.30 pm	Arrival of VVIP
	National anthem - Negaraku And Wawasan Setia Warga
2.40 pm	UiTM
	Welcoming Speech
3.00 pm	Rector's Welcoming Speech
	Officiating Speech
3.10 pm	Gimmick & Montage presentation
3.30 pm	Prize Giving Ceremony
4.00 pm	Photography
5.00 pm	Program Ends

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CATEGORY D

ARAI: ADVANCING TRAINING THROUGH AI-ENABLED AR GAMIFICATION-BASED LEARNING FRAMEWORK FOR THE INDUSTRIAL WORKFORCE

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ABSTRACT - In today's dynamic industrial landscape, the pursuit of efficiency and precision is paramount across diverse sectors, including automotive, manufacturing, and the supply chain. This issue needs to be focused on as those industries need to compete and gain a competitive advantage by involving themselves in IR4.0 for better performance. The complexity inherent in industrial tasks poses formidable challenges to training and operational effectiveness, thereby impacting the accuracy and productivity of the workforce. Traditional industrial methodologies often lag behind, leading to errors, inefficiencies, and discontent among the workforces. Augmented Reality (AR) technology emerges as a transformative solution to these challenges. By seamlessly integrating digital overlays with physical environments, AR offers real-time guidance and immersive training experiences. Envision industrial assembly lines where workers are equipped with cutting-edge AR technologies, blurring the boundaries between the digital and physical realms. This innovative approach revolutionizes conventional industrial practices across multiple sectors. Our proposed AI- based Immersive Technology Framework introduces an AIAR-based application designed to facilitate industrial workforce training and operations of complex IoT machine manuals through visual instructions with AI gamification. The framework enhances productivity, accelerates upskilling, reduces errors, and boosts job satisfaction. Its applicability extends to improvements in industrial settings that require rapid, interactive, and visual learning of complex applications. Industry not only upgrades its processes by embracing AI in AR, but also fosters a culture of efficiency and empowerment, ushering in a new era of industrial training and operations upskilling.

Keywords: IR 4.0, Augmented Reality (AR), AIAR based, AI, & Immersive Technology



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