

25
TAHAP
1999-2024
UITM SEBUAH UNIVERSITI



UNIVERSITI
TEKNOLOGI
MARA

20 & 21
MAY
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**

UiTM *di haduku*

لويها فتوى موليا



<https://kedah.uitm.edu.my/>



<https://www.facebook.com/RakitoriKdhu>

<https://www.facebook.com/UITMSPKerbok>



UITM Cawangan Kedah Channel

Copyright @ 2024 by Universiti Teknologi MARA Kedah Branch.

Published by College of Computing, Informatics and Mathematics,
Universiti Teknologi MARA Kedah Branch.

All rights reserved. No part of this publication may be reproduced, copied, stored in any retrieval system or transmitted in any form or by any means, electronic, mechanical. Photocopying, recording or otherwise, without the prior permission from the Rector, Universiti Teknologi MARA Kedah Branch, 08400 Merbok, Kedah, Malaysia.

The views, opinions and technical recommendations expressed by the contributors are entirely their own and do not necessarily reflect the views of the Faculty of the University.

Copy Editors: Mohd Zhafri Mohd Zukhi
Shahida Farhan Zakaria
Norin Rahayu Shamsuddin
Nor Athirah Mohd Zin
Khairul Adilah Ahmad

Cover Design: Syahrini Shawalludin
Jasmin Ilyani Ahmad

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

IRX065	DESIGN AND DEVELOPMENT OF PATIENT MONITORING SYSTEM USED INTERNET OF THINGS TECHNOLOGY	97
IRX066	MONITORING AIR QUALITY AND SMOKE EMISSIONS USED INTERNET OF THINGS TECHNOLOGY AT BUS STOP IN URBAN AREAS USING MQ-135 AND MQ-2 SENSORS	98
IRX069	INTEGRATED PHOTOCOPY SERVICE SYSTEM	99
IRX070	QWIQR : A QR-BASED REGISTRATION SYSTEM	100
IRX071	MEDICAL BRAIN TEASERS	101
IRX073	CMRS – A NOVEL CLUB MANAGEMENT REGISTRATION SYSTEM FOR A VOLLEYBALL CLUB IN UITM KEDAH BRANCH CAMPUS, MALAYSIA	102
IRX076	APIZ'S BARBERSHOP & ACADEMY MANAGEMENT SYSTEM	103
IRX077	RAZORVATION	104
IRX080	PET-POFA COMPOSITE SOLID CEMENT BRICK MICROWAVE ABSORBER	105
IRX081	KENAF COMPOSITE ANTI-RADIATION PARTITION WALL	106
IRX089	A NOVEL HYBRID HOLT'S METHOD INTEGRATED MOVING AVERAGE (HIMA)	107
IRX091	VIRTUAL MALAYSIA TRADITIONAL COSTUMES VIA AR	108
IRX093	SnooGo	109
IRX097	A BUILDING INFORMATION MODELING (BIM)- BASED INSPECTION WORKFLOW FOR OFF SITE INSTALLATION	110
IRX105	AUTOMATIC STAMPING MACHINE USING ARDUINO	111
IRX114	AN INTEGRATED CAREER INTEREST ASSESSMENT SYSTEM FOR COUNSELLORS	112
IRX119	KEBERKESANAN KELOMPOK TERAPI KONGNITIF DAN KELOMPOK TERAPI TINGKAH LAKU DALAM MENANGANI ISU KESIHATAN MENTAL DALAM ORGANISASI	113
IRX125	SMART ADAB	114
IRX127	THE GEOMETRICALLY ELEGANT DESIGNS OF HEVEA BRASILIENSIS-BASED BIOMASS LIGHWEIGHT BRICK WALLS FOR RADIO FREQUENCY RADIATION ABSORPTION	115

CATEGORY D

IRX001	COMPUTATIONAL QUESTION DESIGN IMPROVEMENT IN ELECTRIC CIRCUIT THEORY	117
IRX005	METaverse GAME DESIGN ON DUAL COGNITIVE TASK FOR STROKE REHABILITATION	118
IRX010	PORTABLE DOCUMENT FORMAT (PDF) INTERAKTIF UNTUK MENGAKSES BAHAN PANDUAN DIGITAL BERKAITAN TOPIK PENGURUSAN REKOD DAN ARKIB MILIK UITM	119
IRX012	ANALYSIS OF VICKERS HARDNESS FOR DIFFERENT MATERIALS BY FINITE ELEMENT AND EXPERIMENTAL METHODS	120
IRX015	INTRODUCING ENHANCED ARBITRATION MODEL USING ARTIFICIAL INTELLIGENCE FOR SWIFT AND EQUITABLE RESOLUTION OF SMALL CLAIMS DISPUTES	121
IRX039	MEDCUP PREDICTOR	122
IRX051	H5P IN HIGHER EDUCATION: PROVEN STRATEGIES TO BOOST ENGAGEMENT AND LEARNING OUTCOMES	123
IRX059	logBlog: INNOVATIVE DIGITAL LOGBOOK	124
IRX060	STUDENTS' COMPREHENSIVE ONLINE EXERCISES (SCORE)	125
IRX064	HeLP via CaMaL	126
IRX067	INTELLIGENT SIMULATOR (i-SIMULATOR) MODEL FOR MEASURING THE SUSTAINABILITY OF MALAYSIAN GLUTINOUS RICE	127
IRX074	GOLD ZAKAT ENLIGHTENING APPS	128
IRX075	CLOSED-LOOP PID CONTROL SYSTEM FOR ENHANCED PRECISION POSITIONING OF PIEZOELECTRIC ACTUATORS	129
IRX099	MYDIARY GOLD APPS (MYGOLD)	130
IRX100	ARAI: ADVANCING TRAINING THROUGH AI-ENABLED AR GAMIFICATION-BASED LEARNING FRAMEWORK FOR THE INDUSTRIAL WORKFORCE	131
IRX113	GHOST VISIT	132

CATEGORY C

A BUILDING INFORMATION MODELING (BIM)- BASED INSPECTION WORKFLOW FOR OFF SITE INSTALLATION

Muhammad Amir Danial Bin Ismail¹, Wan Nur Syazwani Wan Mohammad²

^{1,2}*Department of Built Environment Studies and Technology, College of Built Environment, Universiti Teknologi MARA, Perak Branch, Seri Iskandar Campus, 32610, Seri Iskandar, Perak, Malaysia*

¹amirdanial0304@gmail.com

²wannur956@uitm.edu.my

ABSTRACT - The adoption of Building Information Modeling (BIM) for off- site installation at building sites improves the precision, productivity, and general quality of construction projects. BIM-based inspection workflow is the process of methodically checking those digital models or representations of the project, are by the real conditions on the job site. Recently, the BIM-based inspection workflow has faced numerous problems such as required more BIM software tools, tedious procedures and steps, and less cross-functional collaboration. Hence, this paper aims to create an improvement in BIM-based inspection workflow while solving the problem that has been occurring in previous BIM-based inspection workflow in the Malaysia construction industry. Extensive literature reviews are conducted via various databases (i.e., Scopus, Web of Science, and Science Direct) were explored. Later, the innovative BIM-based inspection workflow using Microsoft Visio was used to visualize the concept and idea of Closed-Loop BIM-based inspection workflow. The findings revealed that the proposed Closed-Loop BIM-based inspection workflow has the potential to be marketed (i.e., local, or international) due to its great benefits (i.e., promote efficiency, sustainability, and well-informed decision making in building projects). Furthermore, it is hoped that the proposed Closed-Loop BIM-based inspection workflow would improve the daily work processes of off-site installation and improve the inspection quality.

Keywords: BIM-based Inspection, Closed- loop, Workflow, Off-site, Installation



Organized By:

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