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2024



International Industrial Revolution 4.0 Exposition

"INNOVATING IDEAS, TRANSPIRING DREAMS"

ABSTRACT BOOK

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**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

INTELLIGENT SIMULATOR (i-SIMULATOR) MODEL FOR MEASURING THE SUSTAINABILITY OF MALAYSIAN GLUTINOUS RICE

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ABSTRACT - The demand for glutinous rice in Malaysia has shown an increasing trend recently although supply from the local sector is critically low. In this regard, this innovation integrates artificial intelligence (AI) and system dynamics (SD) approaches, known as the Intelligent Simulator (i-Simulator) model to measure the sustainability of Malaysian glutinous rice by considering identified factors. In this research, the artificial intelligence method, specifically the artificial neural networks (ANN) model is developed to predict several crucial parameters. Subsequently, the best-so-far parameter from the ANN model will integrate cyclically with the stock-flow diagram (SFD) based on the SD approach to investigate how a variable affects another variable. Then, the i-Simulator model is validated using a structured assessment. Finally, the model is evaluated through what-if analysis to capture the best impact on the glutinous rice industry. The expected outcome is a validated functional correlation among endogenous variables in a dynamic system. The significant outcome of this invention is the policy recommendation based on the evaluated correlation of endogenous variables which is in line with government policy to increase Self Sufficiency Level (SSL) to 90 percent in rice production.

Keywords: System dynamics, Artificial Intelligence, Stock-flow diagram, Glutinous rice, Sustainability



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