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2024



International Industrial Revolution 4.0 Exposition

"INNOVATING IDEAS, TRANSPIRING DREAMS"

ABSTRACT BOOK

Strategic Partners:



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Sultan Badlishah

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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 C

EMPOWERING AGRICULTURE WITH SOIL NUTRIENT PREDICTIONS: A DATA-DRIVEN APPROACH

Abdul Haseeb Wajid¹, Najia Saher², Zunera Abdullah³, Sonia Jamil, Kainat⁴

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ABSTRACT - The novel arena of agricultural technology necessitates advanced modern methodologies for utilizing data to improve crop yield and optimize resource utilization. This research empowering Agriculture with Soil Nutrient Predictions using data-driven approach by employing a sturdy framework integrating machine learning along with comprehensive analysis of soil data to predict soil nutrient levels, assisting in performant agriculture. Employing a dataset with various parameters such as pH, nutritional composition, and mineral abundance of the soil, the analysis has performed by clustering the data types into distinctive groups of soil, which were further analysed to determine their nutrient profiles. K-Means clustering was employed to cluster the data representing the clustering into soil groupings that enlighten the qualities of soil in different kinds of farming. The predictive modelling utilizes Random Forest classifiers, to predict the categories. This approach lines well with the intention of IREx 2024, ICT, IoT, & Process Improvement and places a substantial emphasis on Educational Technology & Innovation and Operational Excellence. This research endeavours to establish new paradigms for agriculture to ensure sustainability in achieving the global target to food protection and restoring ecosystem health.

Keywords: Data Analytics, IREx 2024, K-Means clustering, Soil Nutrient Predictions.



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