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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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UITM Cawangan Kedah Channel

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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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IRX082	MULTIPURPOSE SOAP	5
IRX083	PUFFER FISH BOAT	6
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IRX095	'ROBOCRAB' PEMBERSIH SAMPAH	8
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CATEGORY B

KAWASAKI DISEASE AND HFMD EARLY SCREENING SYSTEM BASED ON SKIN IMAGES AND ALEXNET CONVOLUTIONAL NEURAL NETWORK

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ABSTRACT - Kawasaki disease (KD) can be fatal, as it inflames and swells blood vessels, potentially leading to heart complications in untreated children. It shares similar symptoms with the milder but contagious Hand-Foot-and-Mouth disease (HFMD), such as fever and rash. The early symptoms of KD and HFMD are almost identical. This may mislead parents into assuming HFMD instead of KD, potentially delaying vital treatment and risking life-threatening complications. The project developed an intelligent system using deep learning, utilising skin images and the AlexNet convolutional neural network (CNN) to detect and differentiate between KD and HFMD. A dataset consisting of 707 image samples of KD, HFMD, and healthy controls was acquired from online databases. After preprocessing and augmentation, the dataset was randomly split for training and validation with 80:20 split ratio. Then, AlexNet was trained and validated using the acquired dataset. The network is successfully developed to classify skin images of KD, HFMD, and healthy control with accuracies of 99.8% for training, and 99.6% for validation. While the system is still in the prototype stage, the intelligent model can be enhanced to identify other diseases with symptoms emanating through the skin and miniaturised into a mobile application.

Keywords: Kawasaki disease, Hand-Foot-and-Mouth disease, skin image, deep learning, AlexNet.



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