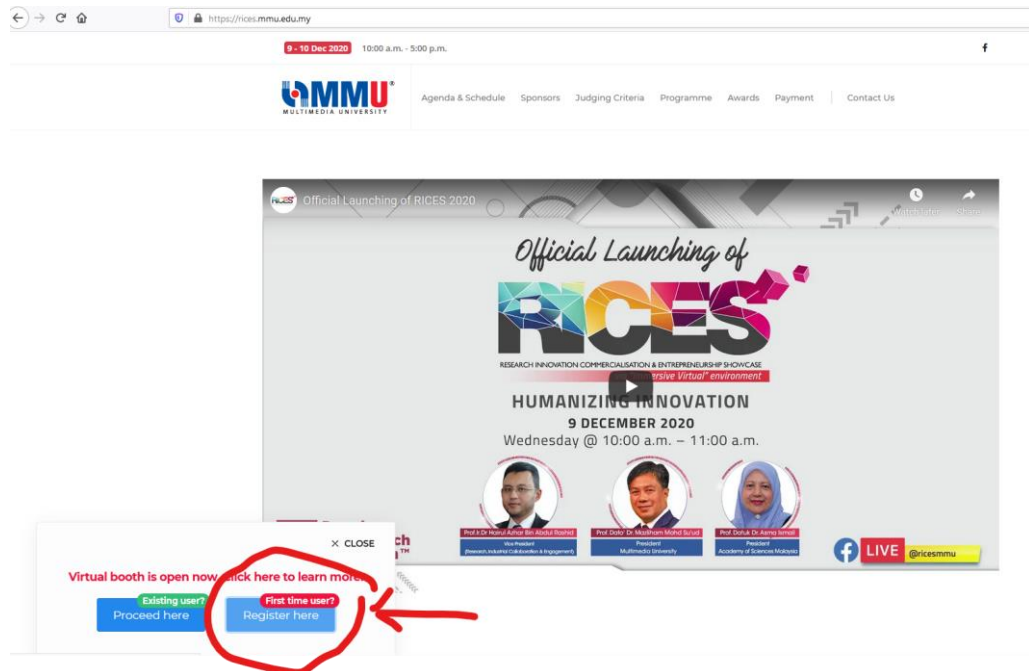


# RICES 2020

## Simple Navigation Guide to Virtual Booth

1. Go to <https://rices.mmu.edu.my>
2. Click “Register here” for first time.

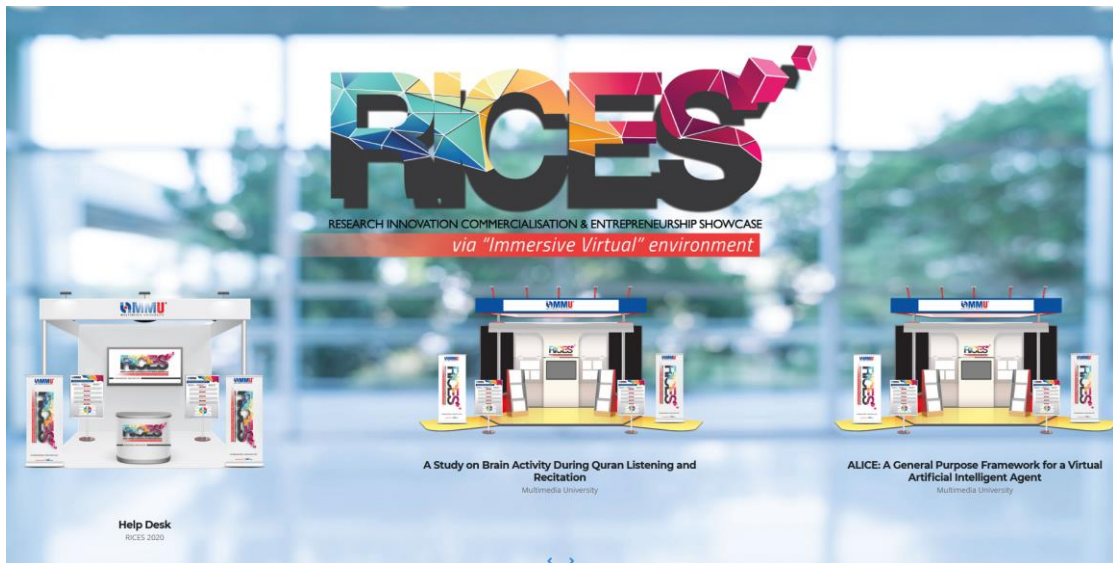


3. Sign up the guest book.

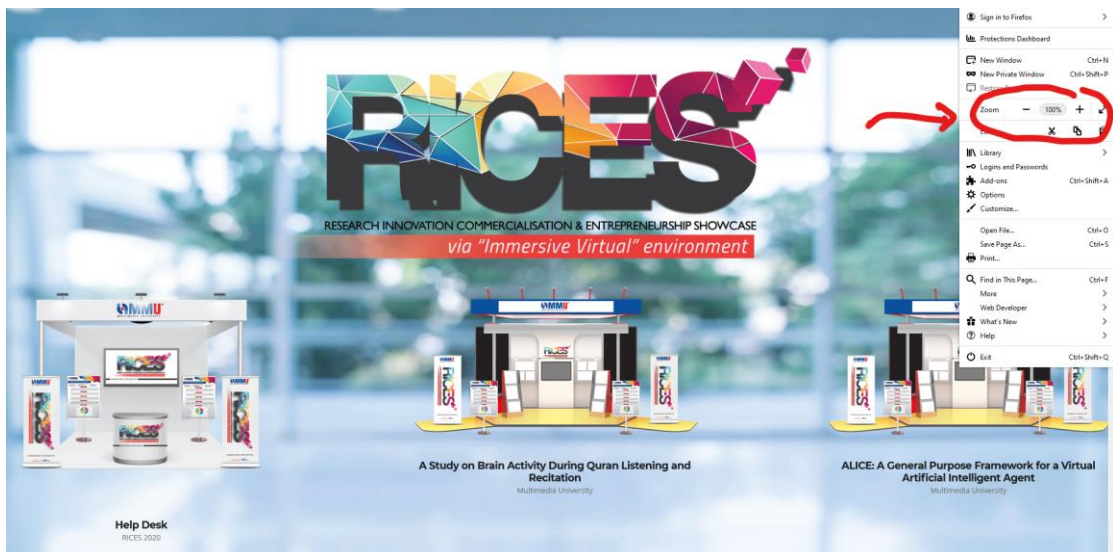
The screenshot shows the 'RICES 2020 Guest Book for 9-10 Dec 2020' registration form. The form includes the following fields and options:

- RICES 2020 Guest Book for 9-10 Dec 2020**  
including participants, judges and visitors/guests  
\*Required
- Email address \***  
Your email address
- Type \***
  - Participant (Exhibitor/Presenter)
  - Judge
  - Visitor/ Guest
- Preferred Salutation (e.g. Prof, Dr., etc.) \***  
Your answer
- Full Name \***

4. Upon submit the form, you will redirect to Virtual Booth page.



5. The virtual booth is best view with 100% or normal zoom.



6. Scroll down this page, and you will see the booth listing:

GETTING INTO IT

## Booths

Select your booth here.

- Help Desk
- Category A: Research Project
- Category B: Social Innovation Project
- Category C: Startups
- Embedding Entrepreneurial Learning (EEL)

7. Navigate to your booth (i.e. select the right category, and find your booth).

GETTING INTO IT

## Booths

Select your booth here.

Help Desk

Category A: Research Project

Engineering & Industrial Design

A1001	A Study on Brain Activity During Quran Listening and Recitation
A1002	ALICE: A General Purpose Framework for a Virtual Artificial Intelligent Agent <span>VR</span>
A1003	Artificial Neural Network Modelling of 3d Printed PLA Part
A1004	Comparison of Modelling Techniques for Polymer Fiber Drawing Systems
A1005	COV_CTX: LUNG CT-SCANS and X-RAYS ARTIFICIAL INTELLIGENCE ENABLED ANALYZER for COVID-19 CASES
A1006	Data Analysis and Prediction on Household Power Consumption
A1007	Design and Implementation of an IoT-Enabled Interactive Kiosk
A1008	Development and Performance Analysis on Antennas for 5G Communication Technologies
A1009	Emotion Recognition for Mental Health Monitoring System
A1010	Energy Harvester Using Piezoelectric Transducer
A1011	Energy Supply & Sustainability in Rural Areas
A1012	Energy-Efficient Interference Management Techniques for Multi-cell Multi-tier HetNets
A1013	Energy-Efficient Resource Allocation with Interference Mitigation for Cognitive Heterogeneous Cloud Radio Access Network (CH-CRAN)
A1014	FPGA Implementation of OFDM Transceiver for MM Wave Communication System (5G)

8. To present your works to the judge/ to hear from the exhibitors, click on the G Meet (Google Meet).

## Early Detection and Prediction of Forest Fire From the Machine Learning Perspective

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LINKS: [G Meet](#) [Video](#)

**DESCRIPTION OF INVENTION**

Forest fire (wildfire) is one of the devastating disaster that will contribute harmful impacts to the environment, living things and human. Thus, early detection is definitely crucial. Studies showed that the fire can be triggered by multiple factors including climate changes, wind speed, temperature, and human factors. With the advent of AI, it is possible to analyze these factors in predicting the occurrence of fire. In this poster, 11 promising machine learning algorithms are explored and tested. Experiments showed that the Random Forest is very competitive in this task.

**INTRODUCTION**  
Forest fire (wildfire) is one of the devastating disaster that will contribute harmful impacts to the victims and environment [1]. For instance, severe forest fire can engulf an immense area of land, and wipe out a number of precious life. Contemporary, smokes emitted will subsequently deteriorate the air quality.

**METHODOLOGY**  
Forest fire can be triggered by multiple factors including climate changes, wind speed, temperature, and human factors. By feeding these data to a machine classifier, it will be able to utilise them to analyse and forecast an early detection of forest fire. In this poster, 11 number of machine learning algorithms is utilised.

**EXPERIMENT**  
Wild Fire Prediction Dataset [2] that focused on centre of Canada is employed in the experimental procedures. In this dataset, there are a total of 1713 instances with 3 affecting attributes to predict forest fire occurrence. The attributes include NDVI (crop's health), LST (soil's temperature), and Thermal Anomalies (fire indicator).

**AFFECTING ATTRIBUTES**  
MACHINE LEARNING ALGORITHM  
PREDICTION  
FIRE NO FIRE

**"Random Forest achieves the best results, 84.18 % of accuracy"**  
Classification Accuracy of 11 Machine Learning Algorithm on Wildfire Prediction Dataset

Algorithm	Accuracy (%)
Decision Tree	78.5
Random Forest	84.18
Support Vector Machine	79.2
Naive Bayes	75.1
K-Nearest Neighbors	76.8
Artificial Neural Network	80.3
Gradient Boosting	82.7
AdaBoost	77.9
Logistic Regression	74.5
Linear SVM	76.2
Quadratic SVM	78.8

**CONCLUSION**  
Experimental results postulates that it is possible to adopt machine classifiers as an integrated approach for early detection of forest fire. Among the 11 classifiers, Random Forest achieves the best results, 84.18 % of accuracy. In future, similar experimental procedure can be employed in Malaysia to detect forest fire.

**REFERENCES**  
1. World Wildfires in 15 Minutes Earth.Org. Tech. Present. October, 2020, September 15. Retrieved November 06, 2020, from <http://earth.org/wildfires-in-15-minutes>

9. It will link you to the Google Meet:

Camera is starting

Ready to join?

Ask to join Present

10. Enjoy your presentation, and all the best!

**SOS INFO:**

In case you want to find me, I will be at the Help Desk. 😊



GETTING INTO IT

**Booths**

Select your booth here.

 Help Desk