



UNIVERSITI
TEKNOLOGI
MARA

Cawangan Melaka

In partnership with



TADULAKO UNIVERSITY



i - JaMCSIIIX
2023

ABSTRACT BOOK 2023

(i - JaMCSIIIX)

INTERNATIONAL JASIN

MULTIMEDIA AND COMPUTER SCIENCE

INVENTION AND INNOVATION EXHIBITION

PUBLICATION DATE :8 NOV 2023

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



i - J a M C S I I X

2023

INTERNATIONAL JASIN MULTIMEDIA & COMPUTER SCIENCE
INVENTION AND INNOVATION EXHIBITION (I-JaMCSIIIX) 2023

Virtual Award Ceremony

8th November 2023
Wednesday

Platform: YouTube

https://www.youtube.com/channel/UCW3Mw4_ngn6tn8gyXIOpLlw





i - J a M C S I I X

2023

INTERNATIONAL JASIN MULTIMEDIA & COMPUTER SCIENCE
INVENTION AND INNOVATION EXHIBITION (I-JaMCSIIIX) 2023

COPYRIGHT © 2023

i-JaMCSIIIX

Universiti Teknologi MARA Cawangan Melaka Kampus Jasin
77300, Merlimau, Melaka

Web: <https://jamcsiix.uitm.edu.my>



In partnership with
Tadulako University

ORGANIZING COMMITTEE

PATRON

PM DR ISMADI MD BADARUDIN

ADVISOR I

TS DR JAMALUDDIN HJ JASMIS

ADVISOR II

DATO' DR MOHD HAJAR HASROL JONO

PROGRAM DIRECTOR

DR. NUR SUHAILAYANI SUHAIMI

DEPUTY DIRECTOR

TS DR NURUL HIDAYAH BINTI MAT ZAIN

SECRETARY I

ANIS SHOBIRIN ABDULLAH SANI

SECRETARY II

FAIQAH HAFIDZAH HALIM

TREASURER I

SITI AISYAH ABD KADIR

TREASURER II

UMMU MARDHIAH JALIL

NURBAITY BINTI SABRI

DR. SITI FEIRUSZ AHMAD FESOL

PUBLICATION

DR. AHMAD FIRDAUS BIN AHMAD FADZIL

SITI NURAMALINA BINTI JOHARI

ROSNIZA ROSLAN

Ts DR. ALYA GEOGIANA BUJA

NORBAHIYAH AWANG

JURY

Ts. DR. NOR AFIRDAUS ZAINAL ABIDIN

DR. RAIHAH AMINUDDIN

NOOR AFNI DERAMAN

SITI FAIRUS BINTI FUZI

BUSHRA BINTI ABDUL HALIM

REGISTRATION

NORDIANAH BINTI JUSOH@HUSSAIN

AINON SYAZANA BINTI AB HAMID

SITI NURSYAHIRA BINTI ZAINUDIN

FADILAH EZLINA SHAHBUDIN

HAJAR IZZATI MOHD GHAZALLI

SYSTEM

FADHLINA IZZAH SAMAN

NOR AZIDA MOHAMED NOH

SHAHITUL BADARIAH SULAIMAN

IZNI SYAMSINA SAARI

INVITATION AND PROMOTION

NOR ADILA KEDIN

	ADI HAKIM BIN TALIB MOHD AMIRUL BIN ATAN
MULTIMEDIA	Ts. NURUL NAJWA ABDUL RAHID@ABDUL RASHID NOOR ASHITAH ABU OTHMAN ANWAR FARHAN ZOLKEPLAY
	ANITA BINTI MOHD YASIN NURUL EMYZA ZAHIDI FATIMAH HASHIM
AWARD	SITI RAMIZAH JAMA DR NURUL HUDA NIK ZULKIFLI MARIATHY BINTI KARIM
	KHAIRUL NURMAZIANNA ISMAIL NUR NABILAH ABU MANGSHOR ZUHRI ARAFAH ZULKIFLI HAZRATI ZAINI
CERTIFICATE	
	Ts. DR. SITI RAHAYU ABDUL AZIZ ALBIN LEMUEL KUSHAN SHAHADAN SAAD
INTERNATIONAL RELATIONS	
	SYAFNIDAR ABDUL HALIM AJK WAKIL UNTAD
LIAISON OFFICER	
	ANIS AMILAH SHARI MOHD RAHMAT MOHD NOORDIN DR YUZAIMI YUNUS DR SURYAEFIZA KARJANTO
SPONSORSHIP	
	RAIHANA MD SAIDI NUR SYUHADA BINTI MUHAMMAT PAZIL ANIS AFIQAH SHARIP SITI MAISARAH MD ZAIN HAZWA HANIM MOHAMED HAMZAH
SECRETARIAT & APPRECIATION BANQUET	

UNTAD'S COMMITTEE FOR I-JAMCSIIX 2023:

PROF. IR. MARSETYO, M.AG., PH.D.

PROF. I WAYAN SUDARSANA, S.SI., M.SI.

PROF. JUNAIDI, S.SI., M.SI., PH.D.

ELISA SESA, S.SI., M.SI., PH.D.

MUKRIM, M.ED., PH.D.

ZARKIANI HASYIM, S.PD., M.ED.

DR. HJ. ANI SUSANTI, M.SI.

DR. ISKANDAR, M.HUM.

DR. IR. ROIS., MP.

SYARIFUL ANAM, S.SI., M.SI., PH.D.

DR. NAHARUDDIN, S.PD, M.SI.

DR. DRG. ELLI YANE BANGKELE, M.KES.

HERMAN, SKM., M.MED.ED.

DR. IR. SAMLIOK NDOBE, M.SI.

DR. RAHMAT BAKRI, S.H., M.H.

DR. HAERUL ANAM, SE., M.SI.

DR. IR. BAKRI, S.T., PG. DIPL. ENG., M.PHIL.

DR. IR. MUHAMMAD YAZDI PUSADAN, S.KOM., M.ENG.

IR. SYAIFUL HENDRA, S.KOM., M.KOM.

RIZANA FAUZI S.T., M.T.

MOHAMMAD FAJRI, S.SI., M.SI.

NURUL FISKIA GAMAYANTI, S.SI., M.SI.

DR. NUR'ENI, S.SI., M.SI.

IMAN SETIAWAN, S.SI., M.SI.

FADJRIYANI, S.SI., M.SI.

LIST OF SPONSORS

External Company Sponsors



Klinik Dr Jamaluddin

Klinik Mawar Jasin

Nasi Ayam Ala Cina Zul

ADS Oasis Enterprise

Noorys Enterprise

Che Ramli bin Che Ismail

Beria Maju Enterprise

Rintiz rezeki

H&K food cafe

HS Gerak Wawasan

Individual Sponsors

En. Muhammad Hanif bin Abdul Aziz

Nor Suhaida binti Karjanto

Table of Contents

Registration ID	Project Title	Page
JM003	Deep Learning Model for 5W (What, When, Where, Who, and Why) Sign Language Translation System	1
JM005	Ramadhan Prep: A Mobile Application in Preparing for the Bigger Season of the Year	2
JM006	BTF Cake Recommender and Management System by using Rule Based	3
JM007	ALIMS - Assets Loan and Inventory Management with SMS Notification	4
JM008	IJH – Immediate Job Hiring System for Part-Timers with Location-Based	5
JM009	CRC – Clothing Review Classification using Sentiment Analysis	6
JM010	Web-Based Safety Helmet Detection System for Construction Site Worker	7
JM011	A Mobile Application System for Parking Validation Based on Deep Learning Image Processing	8
JM012	DEPsy Model	9
JM013	The Use of Computer Diagnostic Apps to Assist Computer Troubleshooting	10
JM014	Quantitative Spasticity Assessment Model of Neurological Disorder Patients	11
JM015	HELPIE: Stress Consoling App	12
JM016	SmartER: Smart English Reader	13
JM017	Synergistic Cyber Security Awareness Model for the Elderly (SCSAM-Elderly)	14
JM018	Kusoke Adventures: Recycling Interactive Game	15
JM019	Rider Parking Guidance using Location-Based Services and Crowdsourcing	16
JM020	PANTAU: Smart Intruder Detection from Video Surveillance Using Deep Learning	17
JM022	Plastopoll: A Serious Game to Raise Awareness About Plastic Pollution	18
JM023	Enhanced Car Park Security Through an Automatic Plate Number Recognition (APNR) System Featuring QR Code Generation	19

JM025	Group Assignment Management System (GAMS)	20
JM026	Proactive Safety Culture Application (PROSCA) Using Geolocation	21
JM027	Flood Wise: Mobile Virtual Reality for Flood Preparation Awareness	22
JM028	Recommendation System of Sports Centre in Malaysia Using Content Based Filtering	23
JM029	Twitter Sentiment Analysis of Malaysian Fast Food Restaurant Chains: A Novel Approach to Understand Customer Perception using Naïve Bayes	24
JM030	ARTventure: Learning Malay Traditional Dance Through Augmented Reality	25
JM031	ExpenseEase - Living Expenses Management Mobile Application	26
JM032	Drowsiness Detection and Alert System Using Face Recognition with Raspberry Pi	27
JM033	Web Application of Facial Emotion Recognition in Classroom Learning Environment with Raspberry Pi 4	28
JM034	HexaBingo MathQuest	29
JM035	Development of mobile app: Funeral services system (FSS)	30
JM036	Development of Mobile Application: Digital Mutawwif	31
JM037	Assessment Marks Management System: A Excel VBA Approach	32
JM038	Design and Fabrication of a Potato Peeling Machine	33
JM040	Donatenow: A Crowdsourcing-Based Mobile Application with Geolocation and Content-Based Filtering Algorithm	34
JM041	TextCrunch	35
JM042	Enhancing College Laundry Management System Through Web-Based Queueing Technique	36
JM043	Cyber Security Fun Race	37
JM044	Food Intake Monitoring and Management System for Athletes	38
JM046	A Game-Based Learning on Food Nutrition for Children	39
JM047	Innovative Video on Compound Interest	40
JM048	Detection of the Spread Covid-19 in Indonesia using K-Means Clustering Algorithm	41
JM049	Forecasting Inflation Rate in Malaysia Using Artificial Neural Network (Ann) Approach	42

JM050	Factors Affecting the House Price Among Kuala Lumpur, Selangor and Johor	43
JM051	Oxygen Hydrogen Generator (HHO Generator)	44
JM052	IoT-based Water Quality Monitoring System for Goldfish	45
JM053	KIT PRO-TAJ (Professional tajwid)	46
JM054	A Framework Of Procurement Analytics For Fraud Coalition Prediction	47
JM055	Exploring Classical Chinese Poetry with AI Tool in PPT Design	48
JM056	Developing Emergency Application for LRT Passengers with Decision Tree Algorithm (RailAlert!)	49
JM057	LetsGoFit: Gamified Mobile Health Application	50
JM058	Tools for Critical Thinking in IT	51
JM059	Sheep Tracker via Radio Frequency Identification (RFID) System	52
JM060	Developing an Application for Handyman Services Platform Using Geofencing and Content-based Filtering (Handy2Help)	53
JM061	Modeling Cases of Stunting Toddler in Indonesia using the Conway Maxwell Poisson Regression Method	54
JM063	Clustering Regencies/Cities in Central Sulawesi Province Based on Poverty Level Using the Average Linkage Method with Principal Component Analysis (PCA)	55
JM064	An Application for Vehicle Rental Service Advertising Using Geofence With Content-Based Filtering (ReadyVehicle)	56
JM065	MYB40: FINGERTECH B40 DISCOUNT CARD	57
JM066	Horticulture Land: Guide to Being A Plantsman Through Green Game	58
JM067	IMFLOODVR : An Immersive Virtual Reality Serious Game for Flood Risk Mitigation Awareness	59
JM068	Tomoe : Topic Modelling Web Application	60
JM069	ROVIGA: Model-Based Capacitive Soil Moisture Sensor for IoT-Based Plant Pot	61
JM070	Classification and Visualization on Eligibility Rate of Applicant's LinkedIn Account Using Naïve Bayes	62
JM071	Forecasting the Number of Schistosomiasis Cases (Snail Fever) in Napu, Central Sulawesi, Using the Auto Regressive Integrated Moving Avarege (ARIMA) Method	63
JM072	Delivera Flow	64

JM073	PeerLoom: Peer-to-Peer Skill Exchange Platform for University Students	65
JM074	Forecasting the Open Unemployment Rate in Central Sulawesi Province Using the Autoregressive Integrated Moving Average (ARIMA) Method	66
JM075	Pre-Parent Test as an Effort to See Adults Readiness to Become Parents Based on Web	67
JM076	The Development of Edu-Fertiblox Digital Game Using Roblox as ABM in The Topic of Fertigation Systems for The Subject of Design and Technology Level 1	68
JM077	SPARK C++: Bridging Concepts with Analogies, Multimedia, and Interactive Quizzes	69
JM078	PLC-Based Water Filling Machine Simulator for Teaching and Learning Activities	70
JM079	HANA'S Map	71
JM080	Classification and Visualization of E-Commerce Product Reviews Comparison Using Support Vector Machine	72
JM081	Futech.Edu (Future Technology Education): Teaching and Learning Application Design in The Society 5.0 Era	73
JM082	Checkers Match Game	74
JM083	SafeDrop: Intelligent Secure Parcel Locker	75
JM084	Gamification in English for Report Writing: Engaging Learning through Webinars	76
JM085	Iffah's Busy Board (IBB)	77
JM086	3R Bag	78
JM087	'CHICK VS VIRUS', A Game-Based Learning Approach in Teaching Students	79
JM088	MyIGCSE-Time: STEM IGCSE for Students	80
JM089	Kad 'Kat Mana Tu?'	81
JM090	Learning Project Formulation using Gamification Approach	82
JM091	Hoopla Pocket Location Aware Mobile Application with Augmented Reality	83
JM092	Mini Blossom Fan: A Practical Approach to Workspace Comfort	84
JM093	Cyberforce: A Cybersecurity Fps-Based Game	85
JM094	An IoT-based Instrument for Free Fall Motion	86



Detection of the Spread of Covid-19 in Indonesia using K-Means Clustering Algorithm

Mohammad Yazdi Pusadan¹, Mohammad Abied Rabbani², Rizka Ardiansyah³, and Hajra Rasmita Ngemba⁴

^{1,2,3,4}Department of Informatics, Faculty of Engineering, Tadulako University

yazdi.diyana@gmail.com, abiedrabbani90@gmail.com, ardiansyah.rizka@gmail.com, hajra.rasmita@gmail.com

Abstract—The purpose of this study is to apply the K-Means algorithm to perform clustering on COVID-19 data to determine the high spread of the virus in regions in Indonesia based on the frequency of the data. The data source used as training data comes from the official Kaggle website, the data used in this study is data on the spread of the coronavirus collected from 2020 to 2021 with a total of 20,816 training data. The clustering process to obtain regional data that has a high spread of COVID-19 is based on the number of cases, death rates, and cure rates in provinces in Indonesia. The process of determining the performance of the cluster is continued based on the internal validity test based on the silhouette index. In this study, the method used is K-Means to perform clustering based on area grouping. The implementation of the K-Means Clustering algorithm for detecting the level of spread of COVID-19 data in Indonesia by using the parameter $k=3$ is quite good with areas in Indonesia that have a high the spread of COVID-19 and the results of the cluster validity test get silhouette values on $O = (\text{Total Case}, \text{Total Death})$ and $P = (\text{Total Case}, \text{Total Death}, \text{Total Recovered})$ have the same cluster value, which is 0.93 which means the cluster quality is very good.

Keywords—clustering, k-means, covid-19, silhouette



i - J a M C S I I X

2023

PUBLISHED BY:

i-JaMCSIIX

Universiti Teknologi MARA Cawangan Melaka

Kampus Jasin

77300 Merlimau, Melaka

Tel: 062645000

Email: jamcsiix@uitm.edu.my

Web: <https://jamcsiix.uitm.edu.my/>

**All rights reserved. No part of this publication
may be reproduced, stored in a retrieval system
or transmitted in any form or by any means,
electronic, mechanical, photocopying, recording
or otherwise, without permission of the
copyright holder**