

ISSN 2503-2259



KINETIK

**Game Technology, Information System,
Computer Network, Computing, Electronics and Control**

KINETIK Vol. 04 No. 01 February 2019



Published by
Universitas Muhammadiyah Malang

Editorial Board**Editor in Chief**

Agus Eko Minarno (Univ. Muhammadiyah Malang) (Scopus Author ID: 56357954100)

Advisory Editor

Robert Lis (Wroclow University of Science and Technology) (Scopus Author ID: 2339344200)
Ismail Khalil Ibrahim (Johannes Kepler University Linz) (Scopus Author ID: 55664509100)
Roman Voliansky (Dniprovsky State Technical University) (Scopus Author ID: 6507010480)
Zulfatman (Univ. Muhammadiyah Malang) (Scopus Author ID: 57193516875)
Taufik (California Polytechnic State University) (Scopus Author ID: 55315690500)
Kavitha Muthusubash (Hiroshima University) (Scopus Author ID: 57203887246)
Muhammad Haikal Satria (Univ. Teknologi Malaysia) (Scopus Author ID: 35103388600)
Rozaimi Ghazali (Univ. Teknikal Melaka) (Scopus Author ID: 56989093200)
Tohari Ahmad (Institut Teknologi Sepuluh Nopember) (Scopus Author ID: 35241970700)
Amrul Faruq (Universitas Muhammadiyah Malang) (Scopus Author ID: 41761216200)
Munawar Agus Riyadi (Univ. Diponegoro Semarang) (Scopus Author ID: 6504093131)
Deris Stiawan (Univ. Sriwijaya) (Scopus Author ID: 36449642900)
Tole Sutikno (Univ. Ahmad Dahlan) (Scopus Author ID: 35794013800)
Evizal Abdul Kadir (Univ. Islam Riau) (Scopus Author ID: 50561254400)
Wahyu Andhyka Kusuma (Univ. Muhammadiyah Malang) (Scopus Author ID: 57053301700)

Layout and Composition

Adhitya Dio Waskito

Editorial Address

Informatics Engineering Department and Electrical Engineering Department
Faculty of Engineering, Universitas Muhammadiyah Malang
Jl. Raya Tlogomas 246, GKB III 4th floor
Phone 0341. 464318 (Ext. 247) Fax. 0341. 460435
Malang, 65144

Editorial Introduction

Assalamu'alaikum Wr. Wb.

Alhamdulillah thanks to Allah Subhanahu Wa Ta'ala, because of His mercy, KINETIK journal, Volume 4, Issue 1, 2019 is officially published. We would like to deliver our gratefulness and highest appreciation to peer reviewers, editor, writers, and all people that have helped and cooperated to make KINETIK journal published. We hope that KINETIK journal could be beneficial and contributive to the knowledge development for all of us. Finally, in order to improve the quality of its contents and layout, we invite you to kindly share your suggestion via email to our editorial team for the following edition improvement.

Wassalamu'alaikum Wr. Wb.
Editor

TABLE OF CONTENTS

VOLUME 4 ISSUE 1

<u>Research Management in Virtual Organization between Higher Education and Industry for Developing Lecture's Knowledge</u>	
Unang Achlison (Sekolah Tinggi Ilmu Elektronika dan Komputer Semarang, Indonesia)	1-12
Mufadhol Mufadhol (Sekolah Tinggi Ilmu Elektronika dan Komputer Semarang, Indonesia)	
<u>Keystroke Dynamic Authentication Using Combined MHR (Mean of Horner's Rules) and Standard Deviation</u>	13-18
Didih Rizki Chandranegara (Universitas Muhammadiyah Malang, Indonesia)	
Fauzi Dwi Setiawan Sumadi (Universitas Muhammadiyah Malang, Indonesia)	
<u>Increasing Smoke Classifier Accuracy using Naïve Bayes Method on Internet of Things</u>	
Alieja Muhammad Putrada (Universitas Telkom, Indonesia)	19-26
Maman Abdurohman (Universitas Telkom, Indonesia)	
Aji Gautama Putrada (Universitas Telkom, Indonesia)	
<u>Game Development to Introduce Indonesian Traditional Weapons using MDA Framework</u>	
Lailatul Husniah (Universitas Muhammadiyah Malang, Indonesia)	27-36
Firdaus Fannani (Universitas Muhammadiyah Malang, Indonesia)	
Ali Sofyan Kholimi (Universitas Muhammadiyah Malang, Indonesia)	
Andika Eko Kristanto (Universitas Muhammadiyah Malang, Indonesia)	
<u>Comparison of Acquisition Software for Digital Forensics Purposes</u>	37-44
Muhammad Nur Faiz (Institut Teknologi Telkom Purwokerto, Indonesia)	
Wahyu Adi Prabowo (Institut Teknologi Telkom Purwokerto, Indonesia)	
<u>A Modified Real-Time Fault-Tolerant Task Allocation Scheme for Wireless Sensor Networks</u>	
Francis Franklin Marshall (Ahmadu Bello University, Nigeria, Nigeria)	45-54
M B Mu'azu (Ahmadu Bello University, Nigeria, Nigeria)	
I J Umoh (Ahmadu Bello University, Nigeria, Nigeria)	
A T Salawudeen (Ahmadu Bello University, Nigeria, Nigeria)	
B O Sadiq (Ahmadu Bello University, Nigeria, Nigeria)	
D E Ikpe (Ahmadu Bello University, Nigeria, Nigeria)	
<u>Controller Based Proxy for Handling NDP in OpenFlow Network</u>	55-62
Fauzi Dwi Setiawan Sumadi (Universitas Muhammadiyah Malang, Indonesia)	
Didih Rizki Chandranegara (Universitas Muhammadiyah Malang, Indonesia)	
<u>Encryption of Text Message on Audio Steganography Using Combination Vigenere Cipher and LSB (Least Significant Bit)</u>	63-74
Ibnu Utomo Wahyu Mulyono (Univesitas Dian Nuswantoro, Indonesia)	
Ajib Susanto (Univesitas Dian Nuswantoro, Indonesia)	
Tiara Anggraeny (Univesitas Dian Nuswantoro, Indonesia)	
Christy Atika Sari (Univesitas Dian Nuswantoro, Indonesia)	

[Fuzzy Logic Control Design in Hybrid Energy Storage System Super-Capacitor Battery for Electric Vehicle](#)

Thomi Dhia (Universitas Muhammadiyah Malang, Indonesia) 75-86
Nur Alif Mardiyah (Universitas Muhammadiyah Malang, Indonesia)
Nurhadi Nurhadi (Universitas Muhammadiyah Malang, Indonesia)

[An Enhancement of Data Hiding Imperceptibility using Slantlet Transform \(SLT\)](#)

Daurat Sinaga (Univesitas Dian Nuswantoro, Indonesia)
Eko Hari Rachmawanto (Univesitas Dian Nuswantoro, Indonesia) 87-98
Christy Atika Sari (Univesitas Dian Nuswantoro, Indonesia)
De Rosal Ignatius Moses Setiadi (Univesitas Dian Nuswantoro, Indonesia)
Noor Ageng Setiyanto (Univesitas Dian Nuswantoro, Indonesia)

Authors Index

All authors whose articles published in KINETIK Volume 4, 2019 are presented in the following lists in alphabetical orders, completed with their numbers and pages.

A T Salawudeen	(4) 45
Ajib Susanto	(4) 63
Aji Gautama Putrada	(4) 19
Alieja Muhammad Putrada	(4) 19
Ali Sofyan Kholimi	(4) 27
Andika Eko Kristanto	(4) 27
B O Sadiq	(4) 45
Christy Atika Sari	(4) 63, 87
D E Ikpe	(4) 45
Daurat Sinaga	(4) 87
De Rosal Ignatius Moses Setiadi	(4) 87
Didih Rizki Chandranegara	(4) 13, 55
Eko Hari Rachmawanto	(4) 87
Fauzi Dwi Setiawan Sumadi	(4) 13, 55
Firdaus Fannani	(4) 27
Francis Franklin Marshall	(4) 45
I J Umoh	(4) 45
Ibnu Utomo Wahyu Mulyono	(4) 63
Lailatul Husniah	(4) 27
M B Mu'azu	(4) 45
Maman Abdurohman	(4) 19
Mufadhol Mufadhol	(4) 1
Muhammad Nur Faiz	(4) 37
Noor Ageng Setiyanto	(4) 87
Nurhadi	(4) 75
Nur Alif Mardiyah	(4) 75
Unang Achlison	(4) 1
Thomi Dhia	(4) 75
Tiara Anggraeny	(4) 63
Wahyu Adi Prabowo	(4) 37

Subject Index

Acquisition	(4) 37
Action Adventure Platformer	(4) 27
Artefacts	(4) 37
Battery Electric Vehicle	(4) 75
Biometric Authentication	(4) 13
Cryptography	(4) 63
Digital Forensics	(4) 37
Discrete Cosine Transform	(4) 87
Discrete Wavelet Transform	(4) 87
Energy Management Control	(4) 75
Fault-tolerant	(4) 45
Fire Alarm System	(4) 19
Fire Disaster	(4) 19
Fuzzy Logic Control	(4) 75
Gameflow Test	(4) 27
Higher Education	(4) 1
Hybrid Energy Storage	(4) 75
Image	(4) 87
Industry	(4) 1
Internet of Things	(4) 19
IPv6	(4) 55
Keystroke Dynamic Authentication	(4) 13
Least Significant Bits	(4) 63
Lecture's Knowledge	(4) 1
MDA Framework	(4) 27
Mean of Horner's Rules	(4) 13
Naïve Bayes Classifier	(4) 19
Neighbor Discovery Protocol	(4) 55
Playtesting Evaluation	(4) 27
Reactive Application	(4) 55
Real-time	(4) 45
Software	(4) 37
Software Defined Networking	(4) 55
Slantlet Transform	(4) 87
Steganography	(4) 63
Supercapacitor	(4) 75
Task Allocation	(4) 45
Traditional Indonesian Weapons	(4) 27
Vigenere Cipher	(4) 63
Virtual Organization	(4) 1
Wav	(4) 63
WSNs	(4) 45

ACKNOWLEDGMENT

Gratitude and highest appreciation are given upon the experts, peer-reviewers, and colleagues that have been invited as reviewers by KINETIK journal in Volume 4 edition, 2019. Here are the lists of experts, peer-reviewers, and colleagues who have participated:

Name	Affiliation
Ali Sofyan Kholimi, S.Kom., M.Kom	Universitas Muhammadiyah Malang
Amrul Faruq, S.T., M.Eng	Universitas Muhammadiyah Malang
Christian Sri Kusuma Aditya, S.Kom., M.Kom	Universitas Muhammadiyah Malang
Denar Regata Akbi, S.Kom., M.Kom	Universitas Muhammadiyah Malang
Deris Stiawan, S.Kom, M.Kom., Ph.D	Universitas Sriwijaya
Diah Risqiwati, S.T., M.T	Universitas Muhammadiyah Malang
Dihin Muriyatmoko, S.ST., MT	Universitas Darussalam Gontor
Dr. Evizal Abdul Kadir	Universitas Islam Riau
Fauzi Dwi Setiawan Sumadi, S.T., M.CompSc	Universitas Muhammadiyah Malang
Gita Indah Marthasari, S.T., M.Kom	Universitas Muhammadiyah Malang
Mahar Faiqurahman, S.Kom., M.T	Universitas Muhammadiyah Malang
Muhammad Aminul Akbar, S.Kom., M.T	Universitas Brawijaya
Qory Hidayati, ST., M.T	Politeknik Negeri Balikpapan
Rahmat Fauzi, S.T., M.T	Universitas Telkom
Syaifuddin, S.Kom., M.Kom	Universitas Muhammadiyah Malang
Widianto, S.T., M.T	Universitas Muhammadiyah Malang

WRITING INSTRUCTION

All manuscript should comply these following rules:

1. All manuscripts must be sent through website <http://kinetik.umm.ac.id> and follow the determined registration steps. Registration and submission are free of charge.
2. The manuscripts should be written by at least 2 authors.
3. The minimum length of manuscript is 8 pages and the maximum is 12 pages. Using paper A4 (210 x 297 mm) and complying the provided template. Manuscript is typed using Microsoft Word (.docx) with margin 30 mm on the top, right, bottom, and left side.
4. Title and keywords are written in Indonesia, whereas abstract must be written in Indonesian and English.
 - a) Title should not be longer than 15 words, font Arial, size 14, centered alignment, and bolded.
 - b) The title should comply the Indonesian Perfected Spelling System (PSS). If you wish to use English terms, please write it in italic.
 - c) The maximum length for abstract is 250 words. Abstract should be written in past tense. Nomenclature standard and abbreviation should be avoided. There is no picture and table excerpt in abstract.
 - d) Maximum keywords are 5 words, and separated using comma. Keywords should represent the content of the manuscript.
5. Manuscript writing system should consist of 4 important parts namely: (1) Introduction, (2) primary content (methodology etc.), (3) Finding and Discussion, and (4) Conclusion. Reference should be written on the last page.
6. Subtitle numbering should comply these following rules:
 - 1 Title sub chapter
 - 1.1 Title sub sub chapter
 - 1.2 Title sub sub chapter
 - 1.2.3 Title sub sub sub chapter
7. Picture and table should be centered and cited in paragraph.
8. Mathematical equation should be written clearly, chronological ordered, and equipped with required notation.

9. Page number, header, and footer will not be included. All hypertext link and bookmark will be deleted. If you wish to link to any email address or URL in your manuscripts, it should be typed in regular font.
10. Citation and Reference should be written in IEEE standard.
 - a) Citation should be numbered using format [1], [2], [3], ... in accordance with its list order.
 - b) Wikipedia, personal blog, and non-scientific website are not allowed.
11. Literature refers to at least 10 latest articles from reputable National or International journal, from latest and relevant journal, referring to KINETIK journal is recommended.
12. The detail writing instruction could be accessed and downloaded on KINETIK website <http://kinetik.umm.ac.id> template section.
13. KINETIK journal, scientific research journal is published four times in a year, on February, May, August, and November. The due dates for submission are as follows:
 - a) February Edition : 25 December
 - b) May Edition : 25 March
 - c) August Edition : 25 June
 - d) November Edition : 25 September

Office Address:

Jl Raya Tlogomas 246 Malang 65144

Telp. 0341-464318, 464319 (Hunting)

Fax. 0341-460435, 460782

Website: <http://kinetik.umm.ac.id>, email: kinetik@umm.ac.id



Published by
Universitas Muhammadiyah Malang

