

LEMBAR
HASIL PENILAIAN SEJAWAT SEBIDANG ATAU PEER REVIEW
KARYA ILMIAH : JURNAL ILMIAH

Judul Karya Ilmiah (Artikel) : The Implementation of Grey Forecasting Model for Forecast Result's Food Crop Agricultural

Jumlah Penulis : 3 Orang (Asfan Muqtadir, **Suryono Suryono**, Vincensius Gunawan)

Status Pengusul : ~~Penulis pertama~~/penulis ke 2 /~~penulis korespondensi~~ **

Identitas Jurnal Ilmiah :

- a. Nama Jurnal : Scientific Journal of Informatics
- b. Nomor ISSN : 2407-7658 (printed), 2460-0040 (online)
- c. Volume, Nomor, Bulan, Tahun : Vol. 3, No. 2, November 2016
- d. Penerbit : Department of Computer Science, Universitas Negeri Semarang
- e. DOI artikel (jika ada) : 10.15294/sji.v3i2.7912
- f. Alamat web jurnal : <https://journal.unnes.ac.id/nju/index.php/sji/article/view/7912>
- g. Terindeks di Scimagojr/Thomson Reuter ISI knowledge/ SINTA 2, DOAJ, EBSCO, Google Scholar, IPI, ROAD

Kategori Publikasi Jurnal Ilmiah (beri ✓ pada kategori yang tepat) :

- ☐ Jurnal Ilmiah Internasional / Internasional Bereputasi **
- ☒ Jurnal Ilmiah Nasional Terakreditasi
- ☐ Jurnal Ilmiah Nasional/Nasional Terindeks di DOAJ, CABI, COPERNICUS**

Hasil Penilaian Peer Review :

Komponen Yang Dinilai	Nilai Reviewer		Nilai Rata-rata
	Reviewer I	Reviewer II	
a. Kelengkapan unsur isi jurnal (10%)	2	2,5	2,25
b. Ruang lingkup dan kedalaman pembahasan (30%)	7	7,5	7,25
c. Kecukupan dan kemutakhiran data/informasi dan metodologi (30%)	6	7	6,5
d. Kelengkapan unsur dan kualitas penerbit (30%)	7	7	7
Total = (100%)	22	24	23
Nilai untuk Pengusul : $(40\% \times 23)/2 = 4,60$			

Semarang, 15 Januari 2020

Reviewer 1

Reviewer 2



Prof. Dr. Wahyu Setia Budi, M.S.
 NIP. 195806151985031002
 Bidang ilmu/Unit kerja : Fisika FSM UNDIP



Prof. Dr. Heri Sutanto, S.Si., M.Si.
 NIP. 197502151998021001
 Bidang ilmu/Unit kerja : Fisika FSM UNDIP

LEMBAR
HASIL PENILAIAN SEJAWAT SEBIDANG ATAU PEER REVIEW
KARYA ILMIAH : JURNAL ILMIAH

Judul Karya Ilmiah (Artikel) : The Implementation of Grey Forecasting Model for Forecast Result's Food Crop Agricultural

Jumlah Penulis : 3 Orang (Asfan Maqtadir, **Suryono Suryono**, Vincensius Gunawan)

Status Pengusul : ~~Penulis pertama/penulis ke 2 /penulis korespondensi~~ **

Identitas Jurnal Ilmiah : a. Nama Jurnal : Scientific Journal of Informatics
b. Nomor ISSN : 2407-7658 (printed), 2460-0040 (online)
c. Volume, Nomor, Bulan, Tahun : Vol. 3, No. 2, November 2016
d. Penerbit : Department of Computer Science, Universitas Negeri Semarang
e. DOI artikel (jika ada) : 10.15294/sji.v3i2.7912
f. Alamat web jurnal : <https://journal.unnes.ac.id/nju/index.php/sji/article/view/7912>
g. ~~Terindeks di Scimagojr/Thomson Reuter ISI knowledge/~~ SINTA 2, DOAJ, EBSCO, Google Scholar, IPI, ROAD

Kategori Publikasi Jurnal Ilmiah (beri ✓ pada kategori yang tepat) : ☐ Jurnal Ilmiah Internasional / Internasional Bereputasi **
☒ Jurnal Ilmiah Nasional Terakreditasi
☐ Jurnal Ilmiah Nasional/Nasional Terindeks di DOAJ, CABI, COPENICUS**

Hasil Penilaian Peer Review :

Komponen Yang Dinilai	Nilai Maksimal Jurnal Ilmiah			Nilai Akhir Yang Diperoleh
	Internasional / Internasional Bereputasi ** ☐	Nasional Terakreditasi ☒	Nasional *** ☐	
a. Kelengkapan unsur isi jurnal (10%)		2,5		2
b. Ruang lingkup dan kedalaman pembahasan (30%)		7,5		7
c. Kecukupan dan kemutahiran data/informasi dan metodologi (30%)		7,5		6
d. Kelengkapan unsur dan kualitas penerbit (30%)		7,5		7
Total = (100%)		25		22
Nilai untuk Pengusul = (40% x 22)/2 = 4,4				

Catatan penilaian Artikel oleh Reviewer :

- Kelengkapan unsur isi jurnal, bila ada ucapan terimakasih akan lebih lengkap.
- Ruang lingkup dan kedalaman pembahasan, ruang lingkup cukup ada kesesuaian dengan judul dan tema jurnal.
- Kecukupan dan kemutahiran data/informasi dan metodologi, Gambar 2,3,4 dan 5 bila ada keterangan sumbu besaran dan satuannya akan lebih baik. 1 dari 5 pustaka lebih dari 10 tahun.
- Kelengkapan unsur dan kualitas terbitan jurnal cukup baik

Semarang, 23 Oktober 2019
Reviewer 1

Prof. Dr. Wahyu Setia Budi, M.S.
NIP. 195806151985031002
Bidang ilmu/Unit kerja : Fisika FSM UNDIP

* dinilai oleh dua Reviewer secara terpisah
** coret yang tidak perlu
*** nasional/ terindeks di DOAJ, CABI, Copernicus

LEMBAR
HASIL PENILAIAN SEJAWAT SEBIDANG ATAU PEER REVIEW
KARYA ILMIAH : JURNAL ILMIAH

Judul Karya Ilmiah (Artikel) : The Implementation of Grey Forecasting Model for Forecast Result's Food Crop Agricultural

Jumlah Penulis : 3 Orang (Asfan Muqtadir, Suryono Suryono, Vincensius Gunawan)

Status Pengusul : Penulis pertama/penulis ke 2 /penulis korespondensi **

Identitas Jurnal Ilmiah :

a. Nama Jurnal : Scientific Journal of Informatics

b. Nomor ISSN : 2407-7658 (printed), 2460-0040 (online)

c. Volume, Nomor, Bulan, Tahun : Vol. 3, No. 2, November 2016

d. Penerbit : Department of Computer Science, Universitas Negeri Semarang

e. DOI artikel (jika ada) : 10.15294/sji.v3i2.7912

f. Alamat web jurnal : <https://journal.unnes.ac.id/nju/index.php/sji/article/view/7912>

g. Terindeks di Scimagojr/Thomson-Reuters ISI knowledge/ SINTA 2, DOAJ, EBSCO, Google Scholar, IPI, ROAD

Kategori Publikasi Jurnal Ilmiah (beri ✓ pada kategori yang tepat) :

☐ Jurnal Ilmiah Internasional / Internasional Bereputasi **

☒ Jurnal Ilmiah Nasional Terakreditasi

☐ Jurnal Ilmiah Nasional/Nasional Terindeks di DOAJ, CABI, COPENICUS**

Hasil Penilaian Peer Review :

Komponen Yang Dinilai	Nilai Maksimal Jurnal Ilmiah			Nilai Akhir Yang Diperoleh
	Internasional / Internasional Bereputasi ** ☐	Nasional Terakreditasi ☒	Nasional *** ☐	
a. Kelengkapan unsur isi jurnal (10%)		2,5		2,5
b. Ruang lingkup dan kedalaman pembahasan (30%)		7,5		7,5
c. Kecukupan dan kemutakhiran data/informasi dan metodologi (30%)		7,5		7
d. Kelengkapan unsur dan kualitas penerbit (30%)		7,5		7
Total = (100%)		25		24
Nilai untuk Pengusul = $(40\% \times 24)/2 = 4,8$				

Catatan penilaian artikel oleh Reviewer :

- a. Artikel lengkap dan telah disusun sesuai dengan templete jurnal.
- b. Hasil penelitian telah dibahas secara mendalam dan baik.
- c. Data pada jurnal telah memadai dan baik, referensi yang digunakan masih kurang hanya 5 buah.
- d. Kuliatas penerbitan baik dan masuk kualifikasi SINTA2.

Semarang, 6 September 2019

Reviewer 2



Prof. Dr. Heri Sutanto, S.Si., M.Si.
 NIP. 197502151998021001
 Bidang ilmu/Unit kerja : Fisika FSM UNDIP

* dinilai oleh dua Reviewer secara terpisah

** coret yang tidak perlu

*** nasional/ terindeks di DOAJ, CABI, Copernicus

SERTIFIKAT

Direktorat Jenderal Penguatan Riset dan Pengembangan,
Kementerian Riset, Teknologi, dan Pendidikan Tinggi



Kutipan dari Keputusan Direktur Jenderal Penguatan Riset dan Pengembangan,
Kementerian Riset, Teknologi, dan Pendidikan Tinggi Republik Indonesia
Nomor: 21/E/KPT/2016, Tanggal 9 Juli 2016
Tentang Hasil Akreditasi Jurnal Ilmiah Periode 1 Tahun 2016

Nama Jurnal Ilmiah
Scientific Journal of Informatics

E-ISSN: 2460-0040

Penerbit: Jurusan Ilmu Komputer Universitas Negeri Semarang

Ditetapkan sebagai Jurnal Ilmiah

TERAKREDITASI PERINGKAT 2

Akreditasi berlaku selama 5 (lima) tahun, yaitu
Volume 3 Nomor 1 Tahun 2016 sampai Volume 7 Nomor 2 Tahun 2020

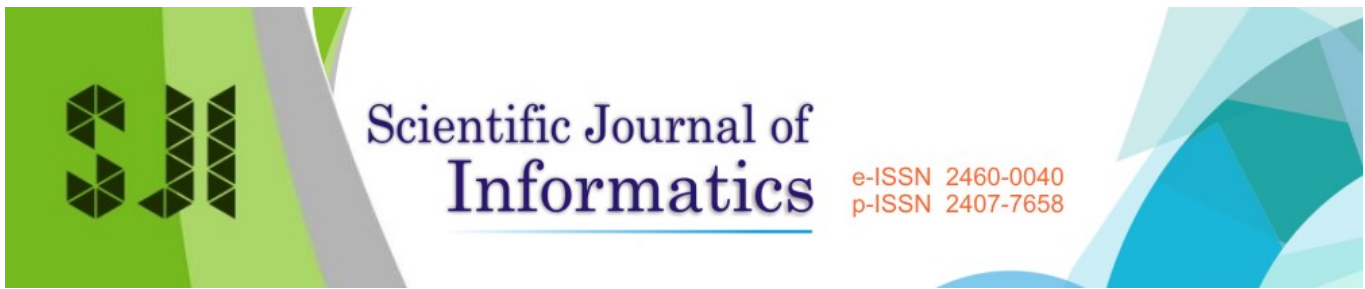
Jakarta, 9 Juli 2016
Direktur Jenderal Penguatan Riset dan Pengembangan



Dr. Muhammad Dimiyati
NIP. 195912171984021001

TERAKREDITASI





[HOME](#) [ABOUT](#) [LOGIN](#) [REGISTER](#) [SEARCH](#) [CURRENT](#) [ARCHIVES](#)

Home > Vol 6, No 2 (2019)

Scientific Journal of Informatics

Scientific Journal of Informatics (p-ISSN 2407-7658 | e-ISSN 2460-0040) published by the Department of Computer Science, Universitas Negeri Semarang, a scientific journal of Information Systems and Information Technology which includes scholarly writings on pure research and applied research in the field of information systems and information technology as well as a review-general review of the development of the theory, methods, and related applied sciences.



Indexing & Abstracting: [DOAJ](#), [EBSCO](#), [Google Scholar](#), [IPI](#), [SINTA](#), [ROAD](#)



ABOUT THE JOURNAL

[Focus and Scope](#)
[Author Guidelines](#)
[Template Article](#)
[Online Submissions](#)
[Editorial Team](#)
[Peer Reviewer](#)
[Ethics Statement](#)
[Indexing & Abstracting](#)
[Scopus Citation](#)
[Visitor Statistics](#)
[Contact](#)

Readers

ID 47,961	GB 152
US 5,426	KR 143
CN 406	DE 119
IN 376	NL 119
MY 328	RU 113
SG 261	TW 106

Pageviews: 158,338



00116818 [View My Stats](#)

USER

Username

Password

☐ Remember me

JOURNAL CONTENT

Search

Search Scope

All

Browse

- [By Issue](#)
- [By Author](#)
- [By Title](#)
- [Other Journals](#)



[HOME](#) [ABOUT](#) [LOGIN](#) [REGISTER](#) [SEARCH](#) [CURRENT](#) [ARCHIVES](#)

[Home](#) > [Archives](#) > **Vol 3, No 2 (2016)**

Vol 3, No 2 (2016)

November 2016

DOI: <https://doi.org/10.15294/sji.v3i2>

Available online since 17th November 2016

Geographical coverage: Universitas Gadjah Mada, Universitas Sanata Dharma Yogyakarta, Universitas Indraprasta PGRI, Universitas Negeri Semarang, Universitas Sebelas Maret, Universitas Singaperbangsa Karawang, STKIP PGRI Tulungagung, Universitas PGRI Ronggolawe Tuban, Universitas Stikubank, Universitas Budi Luhur,

Table of Contents

Articles

[An Identification of Tuberculosis \(Tb\) Disease in Humans using Nae Bayesian Method](#) PDF
Agustin Trihartati S., C. Kuntoro Adi 99-108
[10.15294/sji.v3i2.7918](https://doi.org/10.15294/sji.v3i2.7918)

[10.15294/sji.v3i2.7918](https://doi.org/10.15294/sji.v3i2.7918) Views of Abstract: 196 | PDF: 199

[Assessment The Method of Fuzzy Logic to Determine The Quality of Service Expedition in Jabodetabek Area](#) PDF
Agus Pamuji 109-118
[10.15294/sji.v3i2.7906](https://doi.org/10.15294/sji.v3i2.7906)

[10.15294/sji.v3i2.7906](https://doi.org/10.15294/sji.v3i2.7906) Views of Abstract: 147 | PDF: 166

[Decision Support Systems with AHP and SAW Method for Determination of Cattle with Superior Seeds](#) PDF
Clarissa Amanda Josaputri, Endang Sugiharti, Riza Arifudin 119-128
[10.15294/sji.v3i2.7908](https://doi.org/10.15294/sji.v3i2.7908)

[10.15294/sji.v3i2.7908](https://doi.org/10.15294/sji.v3i2.7908) Views of Abstract: 612 | PDF: 461

[The Effect of Best First and Spreadsubsample on Selection of a Feature Wrapper With Nae Bayes Classifier for The Classification of the Ratio of Inpatients](#) PDF
M Rizky Wijaya, Ristu Saptono, Afrizal Doewes 139-148
[10.15294/sji.v3i2.7910](https://doi.org/10.15294/sji.v3i2.7910)

[10.15294/sji.v3i2.7910](https://doi.org/10.15294/sji.v3i2.7910) Views of Abstract: 157 | PDF: 156

[Identification of Tuberculosis Patient Characteristics Using K-Means Clustering](#) PDF
Betha Nur Sari 129-138
[10.15294/sji.v3i2.7909](https://doi.org/10.15294/sji.v3i2.7909)

[10.15294/sji.v3i2.7909](https://doi.org/10.15294/sji.v3i2.7909) Views of Abstract: 167 | PDF: 249

[Performance Test of Openflow Agent on Openflow Software-Based Mikrotik RB750 Switch](#) PDF
Rikie Kartadie 217-228
[10.15294/sji.v3i2.7987](https://doi.org/10.15294/sji.v3i2.7987)

[10.15294/sji.v3i2.7987](https://doi.org/10.15294/sji.v3i2.7987) Views of Abstract: 393 | PDF: 475

ABOUT THE JOURNAL

[Focus and Scope](#)
[Author Guidelines](#)
[Template Article](#)
[Online Submissions](#)
[Editorial Team](#)
[Peer Reviewer](#)
[Ethics Statement](#)
[Indexing & Abstracting](#)
[Scopus Citation](#)
[Visitor Statistics](#)
[Contact](#)

Readers

ID 47,961	GB 152
US 5,426	KR 143
CN 406	DE 119
IN 376	NL 119
MY 328	RU 113
SG 261	TW 106

Pageviews: 158,338

00116817 [View My Stats](#)

USER

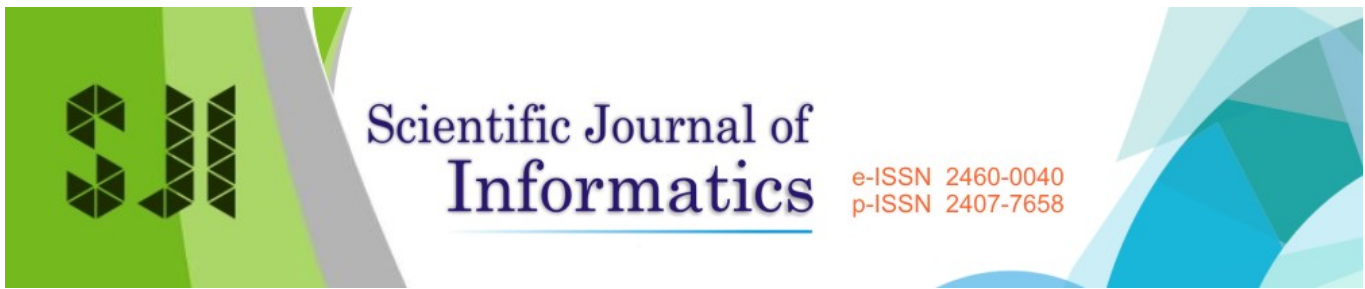
Username
Password
☐ Remember me

JOURNAL CONTENT

Search
Search Scope

Browse

- [By Issue](#)
- [By Author](#)
- [By Title](#)
- [Other Journals](#)



[HOME](#) [ABOUT](#) [LOGIN](#) [REGISTER](#) [SEARCH](#) [CURRENT](#) [ARCHIVES](#)

[Home](#) > [About the Journal](#) > [Editorial Team](#)

Editorial Team

Editor-in-Chief

1. [Much Aziz Muslim](#), (SCOPUS ID=56771128400) Computer Science Department, Universitas Negeri Semarang

Editorial Boards

1. [Mohamad Fauzan Noordin](#), (SCOPUS ID=53264598500) Department of Information System, International Islamic University Malaysia
2. [Jin Peng](#), (SCOPUS ID=9734635400) Institute of Uncertain Systems, College of Mathematics & Computer Science, Huanggang Normal University
3. [Shahrul Na'im Sidek](#), (SCOPUS ID=55560554800) Department of Mechatronics Engineering International Islamic University Malaysia
4. [Edy Winarno](#), (SCOPUS ID=56049606100) Faculty of Information Technology, Universitas Stikubank, Indonesia
5. [Budi Prasetyo](#), (SCOPUS ID=56997557000) Computer Science Department, Universitas Negeri Semarang
6. [Dewi Handayani](#), (SCOPUS ID= 57196061784), Information and Technology Department, Universitas Stikubank, Indonesia
7. [Dwi Ely Kurniawan](#), (SCOPUS ID= 57200983756), Department of Informatics, Batam State Polytechnic, Batam, Indonesia
8. [Nurul Hidayat](#), Informatics & Computer Science Department, Universitas Jenderal Soedirman, Purwokerto, Indonesia

Technical Editor

1. [Anggyi Trisnawan Putra](#), Computer Science Department, Universitas Negeri Semarang



This work is licensed under a [Creative Commons Attribution 4.0 International License](#).

ABOUT THE JOURNAL

[Focus and Scope](#)
[Author Guidelines](#)
[Template Article](#)
[Online Submissions](#)
[Editorial Team](#)
[Peer Reviewer](#)
[Ethics Statement](#)
[Indexing & Abstracting](#)
[Scopus Citation](#)
[Visitor Statistics](#)
[Contact](#)

Readers

ID 47,960	GB 152
US 5,426	KR 143
CN 406	DE 119
IN 376	NL 119
MY 328	RU 113
SG 261	TW 106

Pageviews: 158,330



00116013 [View My Stats](#)

USER

Username

Password

☐ Remember me

JOURNAL CONTENT

Search

Search Scope

Browse

- [By Issue](#)
- [By Author](#)
- [By Title](#)
- [Other Journals](#)



[HOME](#) [ABOUT](#) [LOGIN](#) [REGISTER](#) [SEARCH](#) [CURRENT](#) [ARCHIVES](#)

[Home](#) > [Archives](#) > **Vol 3, No 2 (2016)**

Vol 3, No 2 (2016)

November 2016

DOI: <https://doi.org/10.15294/sji.v3i2>

Available online since 17th November 2016

Geographical coverage: Universitas Gadjah Mada, Universitas Sanata Dharma Yogyakarta, Universitas Indraprasta PGRI, Universitas Negeri Semarang, Universitas Sebelas Maret, Universitas Singaperbangsa Karawang, STKIP PGRI Tulungagung, Universitas PGRI Ronggolawe Tuban, Universitas Stikubank, Universitas Budi Luhur,

Table of Contents

Articles

[An Identification of Tuberculosis \(Tb\) Disease in Humans using Nae Bayesian Method](#) PDF
Agustin Trihartati S., C. Kuntoro Adi 99-108
[10.15294/sji.v3i2.7918](https://doi.org/10.15294/sji.v3i2.7918)

[10.15294/sji.v3i2.7918](https://doi.org/10.15294/sji.v3i2.7918) Views of Abstract: 196 | PDF: 199

[Assessment The Method of Fuzzy Logic to Determine The Quality of Service Expedition in Jabodetabek Area](#) PDF
Agus Pamuji 109-118
[10.15294/sji.v3i2.7906](https://doi.org/10.15294/sji.v3i2.7906)

[10.15294/sji.v3i2.7906](https://doi.org/10.15294/sji.v3i2.7906) Views of Abstract: 147 | PDF: 166

[Decision Support Systems with AHP and SAW Method for Determination of Cattle with Superior Seeds](#) PDF
Clarissa Amanda Josaputri, Endang Sugiharti, Riza Arifudin 119-128
[10.15294/sji.v3i2.7908](https://doi.org/10.15294/sji.v3i2.7908)

[10.15294/sji.v3i2.7908](https://doi.org/10.15294/sji.v3i2.7908) Views of Abstract: 612 | PDF: 461

[The Effect of Best First and Spreadsubsample on Selection of a Feature Wrapper With Nae Bayes Classifier for The Classification of the Ratio of Inpatients](#) PDF
M Rizky Wijaya, Ristu Saptono, Afrizal Doewes 139-148
[10.15294/sji.v3i2.7910](https://doi.org/10.15294/sji.v3i2.7910)

[10.15294/sji.v3i2.7910](https://doi.org/10.15294/sji.v3i2.7910) Views of Abstract: 157 | PDF: 156

[Identification of Tuberculosis Patient Characteristics Using K-Means Clustering](#) PDF
Betha Nur Sari 129-138
[10.15294/sji.v3i2.7909](https://doi.org/10.15294/sji.v3i2.7909)

[10.15294/sji.v3i2.7909](https://doi.org/10.15294/sji.v3i2.7909) Views of Abstract: 167 | PDF: 249

[Performance Test of Openflow Agent on Openflow Software-Based Mikrotik RB750 Switch](#) PDF
Rikie Kartadie 217-228
[10.15294/sji.v3i2.7987](https://doi.org/10.15294/sji.v3i2.7987)

[10.15294/sji.v3i2.7987](https://doi.org/10.15294/sji.v3i2.7987) Views of Abstract: 393 | PDF: 475

ABOUT THE JOURNAL

[Focus and Scope](#)
[Author Guidelines](#)
[Template Article](#)
[Online Submissions](#)
[Editorial Team](#)
[Peer Reviewer](#)
[Ethics Statement](#)
[Indexing & Abstracting](#)
[Scopus Citation](#)
[Visitor Statistics](#)
[Contact](#)

Readers

ID 47,961	GB 152
US 5,426	KR 143
CN 406	DE 119
IN 376	NL 119
MY 328	RU 113
SG 261	TW 106

Pageviews: 158,338

00116817 [View My Stats](#)

USER

Username
Password
☐ Remember me

JOURNAL CONTENT

Search
Search Scope

Browse

- [By Issue](#)
- [By Author](#)
- [By Title](#)
- [Other Journals](#)

Comparison Performance of Genetic Algorithm and Ant Colony Optimization in Course Scheduling Optimizing

PDF
149-158

Imam Ahmad Ashari, Much Aziz Muslim, Alamsyah Alamsyah

[10.15294/sji.v3i2.7911](https://doi.org/10.15294/sji.v3i2.7911)

 [10.15294/sji.v3i2.7911](https://doi.org/10.15294/sji.v3i2.7911)  Views of Abstract: 422 | PDF: 330

The Implementation of Grey Forecasting Model for Forecast Results Food Crop Agricultural

PDF
159-166

Asfan Muqtadir, **Suryono Suryono**, Vincensius Gunawan

[10.15294/sji.v3i2.7912](https://doi.org/10.15294/sji.v3i2.7912)

 [10.15294/sji.v3i2.7912](https://doi.org/10.15294/sji.v3i2.7912)  Views of Abstract: 174 | PDF: 217

Decision Support System to Choose Digital Single Lens Camera with Simple Additive Weighting Method

PDF
167-176

Tri Pina Putri, Paulina H. Prima Rosa

[10.15294/sji.v3i2.7913](https://doi.org/10.15294/sji.v3i2.7913)

 [10.15294/sji.v3i2.7913](https://doi.org/10.15294/sji.v3i2.7913)  Views of Abstract: 436 | PDF: 285

Expert System for Determination of Type Lenses Glasses Using Forward Chaining Method

PDF
177-188

Atikah Ari Pramesti, Riza Arifudin, Endang Sugiharti

[10.15294/sji.v3i2.7914](https://doi.org/10.15294/sji.v3i2.7914)

 [10.15294/sji.v3i2.7914](https://doi.org/10.15294/sji.v3i2.7914)  Views of Abstract: 335 | PDF: 304

Model of Multilevel Sub-Image to Find the Position of Region of Interest

PDF
189-196

Budi Hartono, Veronica Lusiana

[10.15294/sji.v3i2.7915](https://doi.org/10.15294/sji.v3i2.7915)

 [10.15294/sji.v3i2.7915](https://doi.org/10.15294/sji.v3i2.7915)  Views of Abstract: 117 | PDF: 118

Decision Support Model for User Submission Approval Energy Partners Candidate Using Profile Matching Method and Analytical Hierarchy Process

PDF
197-206

Moedjiono Moedjiono, Nia Rahma Kurnianda, Aries Kusdaryono

[10.15294/sji.v3i2.7916](https://doi.org/10.15294/sji.v3i2.7916)

 [10.15294/sji.v3i2.7916](https://doi.org/10.15294/sji.v3i2.7916)  Views of Abstract: 176 | PDF: 199

Comparison of Patterns Shapes and Patterns Texture for Identification of Malaria Parasites in Microscopic Image

PDF
207-216

Jani Kusanti, Yusuf Zain Santosa

[10.15294/sji.v3i2.7917](https://doi.org/10.15294/sji.v3i2.7917)

 [10.15294/sji.v3i2.7917](https://doi.org/10.15294/sji.v3i2.7917)  Views of Abstract: 174 | PDF: 161



This work is licensed under a [Creative Commons Attribution 4.0 International License](https://creativecommons.org/licenses/by/4.0/).

The Implementation of Grey Forecasting Model for Forecasting Result's Food Crop Agricultural

by Suryono Suryono

Submission date: 20-May-2020 10:18AM (UTC+0700)

Submission ID: 1328161609

File name: asting_Model_for_Forecasting_Result_s_Food_Crop_Agricultural.pdf (702.1K)

Word count: 2276

Character count: 11510

The Implementation of Grey Forecasting Model for Forecast Result's Food Crop Agricultural

Asfan Muqtadir¹, Suryono², Vincensius Gunawan³

¹ Department of Informatics, FT, University PGRI Ronggolawe Tuban

^{2,3} Masters of Information Systems, Graduate Schools, University of Diponegoro

Email : ¹asfanme@gmail.com, ²suryono@undip.ac.id, ³vgunawanslametk@undip.ac.id

Abstract

The increasing of the needs of food crops raised several issues related to land use. The problems of land used caused by the lack of information related to productivity and eligibility used of land. The goal of this research is to implementation a model of Grey forecasting GM(1,1) to forecast agricultural production, especially in food crops. GM(1,1) is used to built a model with limited data samples and generate good forecasts for short libertine forecasts. This research uses data from the production of food crops for the 2004-2013 it can be calculated by using the model of GM (1,1). The results showed the model GM (1,1) can produce highly accurate forecasts, from the experimental results for pattern trends generate value ARPE 5.74% or accuracy of forecasts reached 94.26% in crop production.

Keyword: Grey Forecasting, Forecast, Agricultural Products

1. INTRODUCTION

The forecasts are used to predict future events mathematically by looking at earlier data, so the forecasting methods can be provide an orderly way and directed processing that can be obtained using more advanced analysis techniques. The use of the techniques used for the analysis is expected to provide a level of confidence and greater accuracy because it can be tested with the deviations that occurred [1].

The forecasts will produce new information that will be happen in the future, this information is certainly beneficial for the business or policy-makers and decision-makers. But in terms of data collection is not any data is easily obtained so, the data are limited. The forecasts using Grey Forecasting Model as one of the approaches that can be used to build a model with limited data sample, with forecasts of short-term problems, to generate forecasting models are valid and does not require consideration of the statistical distribution [2].

In the previous research used the Grey Forecasting Model to determined the electrical load forecasting in developing countries, the rate of economic growth in developing countries is usually high and unstable so, not easy to get an accurate prediction using long-term data [3].

In Agriculture, especially in food crops, the main thing needed by the community, especially in Tuban district, the increasing need for food crops has caused some problems related of the land use [4]. It is caused a lack of information relating to productivity and feasibility of using the land.

Based on these problems required a forecast of crops to find out information about the productivity of land use, especially food crops, one method used to forecast is the Grey Forecasting or with another term called GM (1,1).

2. METHOD

2.1. Forecast Method

The Forecasting methods can be divided into two qualitative and quantitative forecasting methods. In Qualitative forecasting methods are predictions based on the opinions of a person and their data can not be represented explicitly be a number or value. In Quantitative forecasting methods based on quantitative data of the past and can be made in the form of numbers commonly referred to as data time series that have a relationship with one or more variables that influence [3].

2.2. Theory of Grey System

Grey system theory was first introduced in 1982 by Professor Deng Julong. The theory of Grey system is a system that is less-informed or have simply partially known parameters. The Name of Grey system was chosen based on the color of the subject being studied. For example, in control theory, the darkness of the color has been used to indicate the level of clarity of information. One of that is already well known is called a black box. This concept is used for objects with internal relationships or structure was not known. The word of black to indicated unknown information, white to information fully known, and Grey for most of the information is known and some unknown. Therefore, the information system that fully known is called white system, a system with fully unknown information is called black system, and the system with the most information is known and some not known called the Grey system.

2.3. Procedure Model of Grey System

The Grey forecasting is defined in the form of differential equations, in the model are the parameter values of a and b are to be sought in advance by applying techniques for generating Grey original data.

GM modeling procedures (1.1) can be summarized in the following steps [5]:

- 1) Building the original data series based on the sequence of time

$$x^{(0)} = (x^{(0)}(1), x^{(0)}(2), \dots, x^{(0)}(k)). \quad (1)$$

- 2) By taking the first order accumulated generating operation (1-previous) on $x^{(0)}$, can be obtained by a series of new data AGO :

$$x^{(1)} = (x^{(1)}(1), x^{(1)}(2), \dots, x^{(1)}(k)), \quad (2)$$

Where

$$x^{(1)}(k) = \sum_{i=1}^k x^{(0)}(i), \quad k=2,3,\dots,n. \quad (3)$$

- 3) Calculate the value of the background $z^{(1)}$ formed by the generation method based on the average value of the two data $x^{(1)}(k)$ of adjacent.

$$z^{(1)}(k) = 0.5 (x^{(1)}(k-1) + x^{(1)}(k)) \quad (4)$$

- 4) Furthermore, to each pair of values of $x^{(0)}(k)$ and $z^{(1)}(k)$ formed to implement the Grey differential equation in GM (1,1). Definition of differential equations first order Grey is a model $\frac{dx^{(1)}(k)}{dk} + ax^{(1)}(k) = b$, and the difference equation that is displayed as an image equation or whitenization:

$$x^{(0)}(k) + az^{(1)}(k) = b, \quad (5)$$

Where a is the coefficient of expansion, and b is a variable input Grey.

- 5) To get the value of parameters a and b are used the least squares method or the method of least squares estimate $\hat{a} = \begin{bmatrix} a \\ b \end{bmatrix}$.

$$\hat{a} = (B^T B)^{-1} B^T Y, \quad (6)$$

Where

$$Y = \begin{bmatrix} x^{(0)}(2) \\ x^{(0)}(3) \\ \vdots \\ x^{(0)}(n) \end{bmatrix} \quad B = \begin{bmatrix} -z^{(1)}(2) & 1 \\ -z^{(1)}(3) & 1 \\ \vdots & \vdots \\ -z^{(1)}(n) & 1 \end{bmatrix} \quad (7)$$

- 6) Based on the time response sequence to obtain an initial value, eg $x^{(1)}(1) = x^{(0)}(1)$, is the result of the grey differensial GM(1,1) :

$$\hat{x}^{(1)}(k) = \left(x^{(0)}(1) - \frac{b}{a}\right) e^{-a(k-1)} + \frac{b}{a} \quad (8)$$

- 7) Uses reverse techniques or restored accumulation value to generate approximate values $\hat{x}^{(0)}(k)$.

$$\hat{x}^{(0)}(k) = \hat{x}^{(1)}(k) - \hat{x}^{(1)}(k-1). \quad (9)$$

2.4. Forecast Model Accuracy

Accuracy of forecast models can be seen from the difference between the original data and the results of such forecasts in Table 1 [5]. The results obtained from the calculation of forecasts by using Grey forecasting takes Relative Percentage Error, and Average Relative Percentage Error.

$$\epsilon(k) = x^{(0)}(k) - \hat{x}^{(0)}(k) \quad (10)$$

$$\text{RPE}(k) = \frac{|\epsilon(k)|}{x^{(0)}(k)} \times 100\% \quad (11)$$

$$\text{ARPE} = \frac{1}{n-1} \sum_{k=2}^n \frac{|\epsilon(k)|}{x^{(0)}(k)} \quad (12)$$

Description :

$\hat{x}^{(0)}(k)$ = forecast value

$x^{(0)}(k)$ = actual value

$|\epsilon(k)|$ = Absolute residual value

Table 1. Classification accuracy of grey forecasting

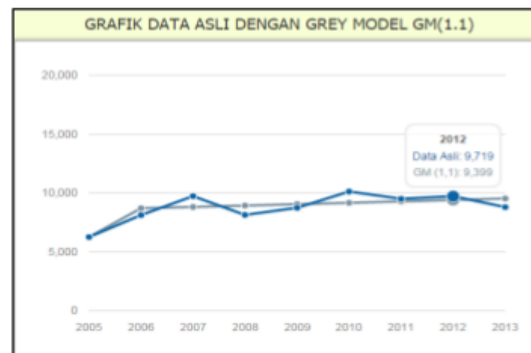
RPE(k) and ARPE (%)	Forecasting power
< 10	Very accurate
10-20	Accurate
20-50	Less
> 50	Not Accurate

3. RESULTS AND DISCUSSION

After all the production data for districts and plants required previously stored, such of the data is the selected districts are District of Kenduruan and crops selected are rice fields. So after all stages of the electoral system passed will show the calculation results as in Figure 1 and Figure 2.

Prediksi Hasil Pertanian PADI SAWAH di Kecamatan Kenduruan			
NO	TAHUN	DATA ASLI	DATA PREDIKSI
1	2005	6245	6245
2	2006	8113	8692
3	2007	9722	8806
4	2008	8126	8921
5	2009	8733	9038
6	2010	10113	9157
7	2011	9498	9277
8	2012	9719	9399
9	2013	8789	9522

Figure 1. The results of the calculation grey forecasting



4

Figure 2. Graph of the calculation results of grey forecasting

The accuracy of grey forecasting models used to determine the level of accuracy of the forecasts that have been made. By using equation (11) for calculating the residual value or the difference between the initial value and the predicted value and equation (12) to calculate the relative error percentage. Table 2 shows the results of the calculation and the residual value of RPE..

15

Table 2. The accuracy of the grey forecasting model GM (1,1)

k	Year	Actual value $x^{(0)}(k)$	Model value $\hat{x}^{(0)}(k)$	Residual $\epsilon(k)$	RPE (k)
1	2005	6245	6245	0	0
2	2006	8113	8692	-579	7,137%
3	2007	9722	8806	916	9,422%
4	2008	8126	8922	-796	9,790%
5	2009	8733	9039	-306	3,499%
6	2010	10113	9157	956	9,452%
7	2011	9498	9277	221	2,324%
8	2012	9719	9399	320	3,293%
9	2013	8789	9522	-733	8,342%

Furthermore, to determine the value of *ARPE* (*Absolute Relative Percentage Error*) used equation (12).

$$ARPE = \frac{1}{9-1} (53,26\%) = 6,66 \%$$

The result of the calculation of rice crops in the District Kenduruan, forecasting error rate is 6.66% the accuracy of the results forecast using the model GM (1,1) reached 93.34%. Referring to Table 1 it can be seen that for *ARPE* value <10% categorized as very accurate and indicate the forecasts are not much different and even have a tendency value is almost the same as actual value.

The crop of products has very rarely shows activity results are constant and evenly distributed in a row. It is highly influential in the forecast results by using the method Grey forecasting. To handle the need of an evaluation system of the calculation results with the types of forecasting patterns, in order to know the level of accuracy that comes closest to the actual data. To determine the accuracy of the calculation of the system by the application of appropriate patterns, the evaluation the calculation of system with this type of pattern.

a) Trends Pattern (*Trend*)

If the data of agricultural production had increased the overall tendency is up or down, or flat do not go up and not down for long periods of time. For example, the production of rice crops in the District Singgahan. The result of the calculation of model of GM (1,1) pattern of the trend can be seen in Figure 3.

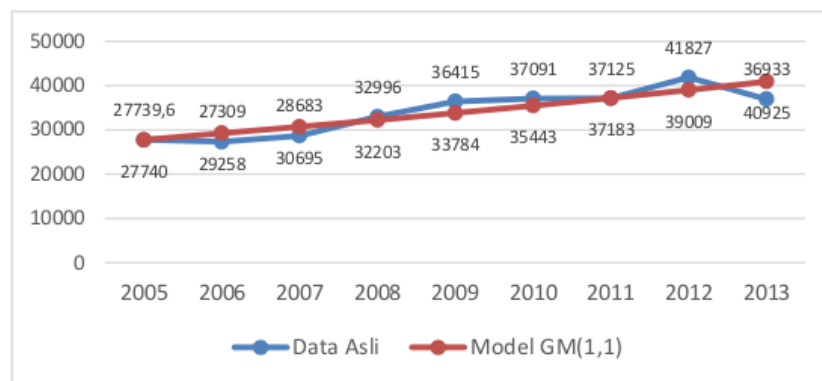


Figure 3. Graph of the calculation results with the trend pattern

The result of the calculation model of GM (1,1) with a pattern of crop production trends, providing improved accuracy of the *ARPE* 5.74%.

b) Random Pattern (*Random*)

The Erratic pattern seen in crop production. Most of the agricultural production data has a random pattern. For example, the production of sweet potato crops in the District Kenduruan. The result of the calculation model of GM (1,1) random pattern can be seen in Figure 4..

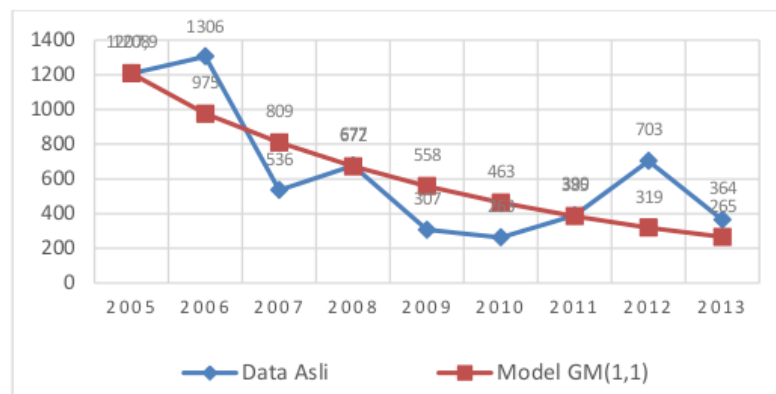


Figure 4. Graph the results of the calculation with random pattern

The result of the calculation model of GM (1,1) with a random pattern of crop production, produced a very low level of accuracy is 39.68%

c) Cyclical Pattern (*Cycle*)

The Cyclical pattern has a production output gradually rising and gradually fall over a longer time. The production of food crops in the district of Tuban has some production data with the cyclical pattern, for example, the production of maize in the District Kenduruan. The result of the calculation model of GM (1,1) the cyclical pattern can be seen in Figure 5.

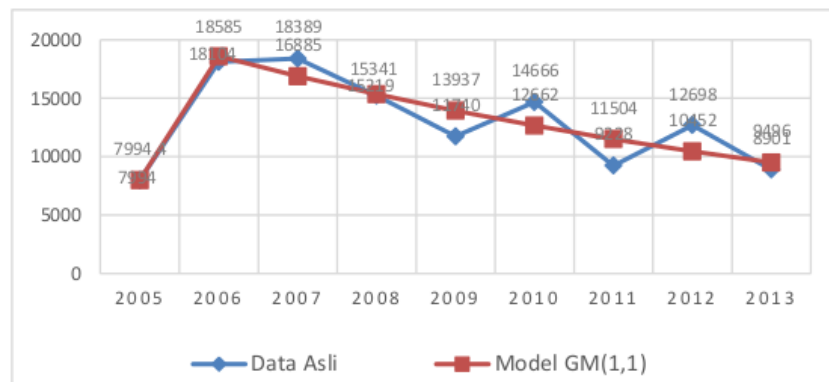


Figure 5. Graph of the calculation results with the cyclical pattern

The result of the calculation model of GM (1,1) with the cyclical pattern of crop production, produced a level of accuracy of the ARPE 11.63%.

4. CONCLUSION

From the research results implementation of Grey forecasting models for forecast the product of food crops, it can be concluded that Grey forecasting method implemented to produced a highly accurate forecast data for patterns of trends in crop production. Grey forecasting models applied linear equations for the calculation history data with incomplete data, so the results of calculations for pattern trends is highly accurate. The results of tests performed on several types of crop production, indicated the accurate prediction of data on agriculture with crops of rice paddies ARPE value are 5.74% or 94.26% accuracy of forecasts. The mentioned because of rice production patterns show up trend or down

5. REFERENCES

- [1] Heizer, J., Render, B., 2005. *Operation Management, 7th Edition*. Manajemen Operasi Edisi 7, Buku I. Penerbit Salemba Empat, Jakarta.
- [2] Sifeng, L., Yi, L., 2010. *Grey Systems: Theory and Applications*. Springer Science & Business Media, Berlin.
- [3] Li, D.C., Chang, C.J., Chen, C.C., Chen, W.C., 2012. Forecasting short-term electricity consumption using the adaptive grey based approach an Asian case. *Omega*. Vol. 40(6): 767–773.
- [4] BPS, 2013. *Tuban Dalam Angka 2013*. Badan Pusat Statistik Tuban, Tuban
- [5] Shang, L. 2012. Forecasting agricultural output with an improved grey forecasting model based on the genetic algorithm, *Journal of Computers and Electronics in Agriculture*. Vol. 85: 33–39.

The Implementation of Grey Forecasting Model for Forecasting Result's Food Crop Agricultural

ORIGINALITY REPORT

17%

SIMILARITY INDEX

8%

INTERNET SOURCES

13%

PUBLICATIONS

8%

STUDENT PAPERS

PRIMARY SOURCES

1

sinta3.ristekdikti.go.id

Internet Source

2%

2

Submitted to Universitas Negeri Surabaya
The State University of Surabaya

Student Paper

2%

3

Yuan, C.. "The relation between Chinese economic development and energy consumption in the different periods", Energy Policy, 201009

Publication

2%

4

Ou, Shang-Ling. "Forecasting agricultural output with an improved grey forecasting model based on the genetic algorithm", Computers and Electronics in Agriculture, 2012.

Publication

1%

5

docplayer.info

Internet Source

1%

6

Li, D.C.. "Forecasting short-term electricity consumption using the adaptive grey-based approach-An Asian case", Omega, 201212

1%

- | | | |
|----|---|-----|
| 7 | Hesham F. Maghrabie, Yvan Beauregard, Andrea Schiffauerova. "Grey-based Multi-Criteria Decision Analysis approach: Addressing uncertainty at complex decision problems", Technological Forecasting and Social Change, 2019
Publication | 1 % |
| 8 | Grey Systems, Volume 3, Issue 3 (2013-11-02)
Publication | 1 % |
| 9 | Dmitry Ivanov, Alexander Tsipoulanidis, Jörn Schönberger. "Global Supply Chain and Operations Management", Springer Science and Business Media LLC, 2017
Publication | 1 % |
| 10 | Che-Jung Chang, Der-Chiang Li, Wen-Li Dai, Chien-Chih Chen. "Utilizing an Adaptive Grey Model for Short-Term Time Series Forecasting: A Case Study of Wafer-Level Packaging", Mathematical Problems in Engineering, 2013
Publication | 1 % |
| 11 | Submitted to University College London
Student Paper | 1 % |
| 12 | "Researching on the improvement and case of grey prediction model", Energy Science and Applied Technology, 2015.
Publication | 1 % |

13	journals.plos.org Internet Source	<1 %
14	downloads.hindawi.com Internet Source	<1 %
15	crenos.unica.it Internet Source	<1 %
16	res.mdpi.com Internet Source	<1 %
17	Li, G.D.. "A research on short term load forecasting problem applying improved grey dynamic model", International Journal of Electrical Power and Energy Systems, 201105 Publication	<1 %
18	Submitted to World Maritime University Student Paper	<1 %
19	Grey Systems, Volume 2, Issue 2 (2012-08-18) Publication	<1 %
20	Submitted to National College of Ireland Student Paper	<1 %
21	D. Pi, J. Liu, X. Qin. "A Grey Prediction Approach to Forecasting Energy Demand in China", Energy Sources, Part A: Recovery, Utilization, and Environmental Effects, 2010 Publication	<1 %

Exclude quotes	Off
Exclude bibliography	On

Exclude matches	Off
-----------------	-----

The Implementation of Grey Forecasting Model for Forecasting Result's Food Crop Agricultural

GRADEMARK REPORT

FINAL GRADE

/0

GENERAL COMMENTS

Instructor

PAGE 1

PAGE 2

PAGE 3

PAGE 4

PAGE 5

PAGE 6

PAGE 7

PAGE 8

Comparison Performance of Genetic Algorithm and Ant Colony Optimization in Course Scheduling Optimizing

PDF
149-158

Imam Ahmad Ashari, Much Aziz Muslim, Alamsyah Alamsyah

[10.15294/sji.v3i2.7911](https://doi.org/10.15294/sji.v3i2.7911)

 [10.15294/sji.v3i2.7911](https://doi.org/10.15294/sji.v3i2.7911)  Views of Abstract: 422 | PDF: 330

The Implementation of Grey Forecasting Model for Forecast Results Food Crop Agricultural

PDF
159-166

Asfan Muqtadir, Suryono Suryono, Vincensius Gunawan

[10.15294/sji.v3i2.7912](https://doi.org/10.15294/sji.v3i2.7912)

 [10.15294/sji.v3i2.7912](https://doi.org/10.15294/sji.v3i2.7912)  Views of Abstract: 174 | PDF: 217

Decision Support System to Choose Digital Single Lens Camera with Simple Additive Weighting Method

PDF
167-176

Tri Pina Putri, Paulina H. Prima Rosa

[10.15294/sji.v3i2.7913](https://doi.org/10.15294/sji.v3i2.7913)

 [10.15294/sji.v3i2.7913](https://doi.org/10.15294/sji.v3i2.7913)  Views of Abstract: 436 | PDF: 285

Expert System for Determination of Type Lenses Glasses Using Forward Chaining Method

PDF
177-188

Atikah Ari Pramesti, Riza Arifudin, Endang Sugiharti

[10.15294/sji.v3i2.7914](https://doi.org/10.15294/sji.v3i2.7914)

 [10.15294/sji.v3i2.7914](https://doi.org/10.15294/sji.v3i2.7914)  Views of Abstract: 335 | PDF: 304

Model of Multilevel Sub-Image to Find the Position of Region of Interest

PDF
189-196

Budi Hartono, Veronica Lusiana

[10.15294/sji.v3i2.7915](https://doi.org/10.15294/sji.v3i2.7915)

 [10.15294/sji.v3i2.7915](https://doi.org/10.15294/sji.v3i2.7915)  Views of Abstract: 117 | PDF: 118

Decision Support Model for User Submission Approval Energy Partners Candidate Using Profile Matching Method and Analytical Hierarchy Process

PDF
197-206

Moedjiono Moedjiono, Nia Rahma Kurnianda, Aries Kusdaryono

[10.15294/sji.v3i2.7916](https://doi.org/10.15294/sji.v3i2.7916)

 [10.15294/sji.v3i2.7916](https://doi.org/10.15294/sji.v3i2.7916)  Views of Abstract: 176 | PDF: 199

Comparison of Patterns Shapes and Patterns Texture for Identification of Malaria Parasites in Microscopic Image

PDF
207-216

Jani Kusanti, Yusuf Zain Santosa

[10.15294/sji.v3i2.7917](https://doi.org/10.15294/sji.v3i2.7917)

 [10.15294/sji.v3i2.7917](https://doi.org/10.15294/sji.v3i2.7917)  Views of Abstract: 174 | PDF: 161



This work is licensed under a [Creative Commons Attribution 4.0 International License](https://creativecommons.org/licenses/by/4.0/).