

2012 International Conference on Advanced Computer Science and Information Systems

(ICACSYS 2012)

**Depok, West Java, Indonesia
1 – 2 December 2012**



**IEEE Catalog Number: CFP1219R-PRT
ISBN: 978-1-4673-3026-8**

Table of Contents

Welcome Message from General Chairs

Welcome Message from Dean of Faculty of Computer Science University of Indonesia

Committee

Program at Glance

Table of Content

Plenary Lectures

Digital Pathology Imaging – The Next Frontier in Medical Imaging 1

Bikash Sabata

Sustainable Feature? Building and Livetime Assessment 7

Elena I. Gaura, John Halloran, James Brusey, Ross Wilkins, and Ramona Rednic

Vision-based Integrated Systems for Intelligent Data Analysis 13

S. Pankanti, L. Brown, J. Connell, A. Datta, Q. Fan, R. Feris, N. Haas, and N. Ratha

Computer Networks, Architecture & High Performance Computing

Development of Traffic sensor system with Virtual Detection Zone 19

Benny Hardjono, Adi Nurhadiyatna, Petrus Mursanto, and Wisnu Jatmiko

Traffic Intelligent System Architecture Based on Social Media Information 25

A. Wibisono, I. Sina, M. A. Ihsannuddin, A. Hafidz, B. Hardjono, W. Jatmiko, and P. Mursanto

Cloud Computing Model and Implementation of Molecular Dynamics Simulations using 31
Amber and Gromacs

Ari Wibisono and Heru Suhartanto

An Integrated Sleep Stage Classification Device based on Electrocardiograph Signal 37

Indra Hermawan, M. Sakti Alvissalim, M. Iqbal Tawakal, and Wisnu Jatmiko

Range-based Localization with Area Verification for Sparse Distributed Wireless Sensor 43
Networks

Ali Husein Alasiry and Shinji Ohyama

Energy Consumption Analysis of Modified AODV Routing Protocol under Random Way Point and Reference Point Group Mobility Models <i>Harris Simaremare, Abdusy Syarif, Abdelhafid Abouaissa, Riri Fitri Sari, and Pascal Lorenz</i>	47
Land Classifier using Parallel Minimum Vector Variance Method <i>Lely Hiryanto, Karendef, and Dyah Erny Herwindiati</i>	53
Development of Real-Time Flight Simulator for Quadrotor <i>Joga D. Setiawan, Yuhanes D. Setiawan, Mochammad Ariyanto, Agus Mukhtar, and Agus Budiyono</i>	59
The Enhancement of Node Positioning Accuracy Using Hybrid Localization Method for Wireless Sensor Networks <i>Prima Kristalina, Wirawan, and Gamantyo Hendrantoro</i>	65
A New Area Partitioning Strategy for Unequal Clustering of Wireless Sensor Networks <i>Amin Suharjono, Wirawan, and Gamantyo Hendrantoro</i>	71
A Survey on Low-cost RFID Authentication Protocols <i>Irfan Syamsuddin, Song Han, and Tharam Dillon</i>	77
Aeronautical Telecommunication Network Protocol Tunnel Prototype Over IP Based Infrastructure <i>Tonny Adhi Sebastian</i>	83
Analysis of The Effect of Beacon Order and Superframe Order Value to The Performance of Multihop Wireless Networks on IEEE 802.15.4 Protocol <i>Rudiyanto and Riri Fitri Sari</i>	89
White LED Illumination for Improving Outdoor Image Analysis for Palm Oil Fruit Ripeness Detection <i>N. M. Anis, Z. Abdul Halim, J. Mohd Saleh, H. Ibrahim, K. Musa, N. Fadzilah, and O. Sidek</i>	95
Designing A 12 DC Power Supply of Lithium Ion Battery in Parallel Connection by Using One Single Charge Controller <i>Azman A. M, Z. A. Halim, and Shahid Iqbal</i>	101

Development of Wide Secured Wireless Sensor Network for Monitoring Global Warming	107
<i>Azizul Abdullah, O.Sidek, N.A.Amran, U.N.Za'bah, F.Nikmat, Hadi Jafar, and Munajat Abdul Hadi</i>	
Supercapacitor-battery Slow Charged Rate For WSN Application	113
<i>Nur Amira, O.Sidek, and Hadi Jafar</i>	
Laboratory Experimental Test of Interferometer Sensor for Structure Movement in 3 Dimensional Axis by Method of Calculation	119
<i>Hadi Jafar, O.Sidek, M.Fadly, and A.Abdullah</i>	
Digital Libraries and Distance Learning	
Knowledge Management Application System Implementation in Global Energy Company: Opentext 9.7.1 Livelink Global Exploitation	125
<i>Ahmad Murtadho</i>	
E-Goverment	
e-Livestock in Indonesia : Definition Adjustment, Expected Benefits, and Challenges	131
<i>Arief Ramadhan, Muladno, Dana Indra Sensuse, and Aniati Murni Arymurthy</i>	
Enterprise Computing	
Industrial Extreme Programming Practice's Implementation using Rational Unified Process on Agile Development Theme	137
<i>I Putu Edy Suardiyana Putra, Arlisa Yuliawati, and Petrus Mursanto</i>	
Information Retrieval	
Automatic Generation of Shallow-Transfer Rule for Indonesian-to-English	143
<i>Evi Yulianti, Mirna Adriani, Hisar M. Manurung, Indra Budi, and Achmad N. Hidayanto</i>	
Syntax-Driven Semantic Analysis for Constructing Use Case Diagrams from Software Requirement Specifications in Indonesian	149
<i>Latifaah and Ruli Manurung</i>	
Dwipa Search Engine: When E-Tourism Meets The Semantic Web	155

Guson Prasamuaro Kuntarto and Dennis Gunawan

Social Media Analysis for Indonesian Language: Case Study Flood in Jakarta

161

Mega Oktafiani Putri, Ainun Jariyah, Sari Riri Fitri, and Hashimoto Takako

IT-Governance

Quantifying IT Business Value using IT Valuation Matrix: Case Study of North Sulawesi Province, Indonesia

167

Hans Wowor and Stanley Karouw

Knowledge Conversion Conceptual Model Case Study: Bali Handicraft SMEs

173

Ni Luh Ayu Kartika Yuniastari S. and Husni S. Sastramihardja

Pattern Recognition and Image Processing

ITS Information Source: Vehicle Speed Measurement using Camera as Sensor

179

Adi Nurhadiyatna, Benny Hardjono, Ari Wibisono, Wisnu Jatmiko, and Petrus

Mursanto

Cattle's Fur Detection Based on Gaussian Mixture Model in Complex Background: in Application of Automatic Race Classification of Beef Cattle

185

Ary Noviyanto and Aniati Murni Arymurthy

Efficient Incomplete Ellipse Detection based on Minor Axis for Ultrasound Fetal Head Approximation

191

I Putu Satwika, M. Iqbal Tawakal, Zaki Imaduddin, and Wisnu Jatmiko

Analysis of Multi Codebook GLVQ versus Standard GLVQ in Discriminating Sleep Stages

197

M. Iqbal Tawakal, M. Eka Suryana, Ary Noviyanto, I Putu Satwika, M. Sakti

Alvissalim, Indra Hermawan, Sani M. Isa, and Wisnu Jatmiko

A Paddy Growth Stages Classification Using MODIS Remote Sensing Images with Balanced Branches Support Vector Machines

203

Sidik Mulyono, Ivan Fanany, T Basarudin

Performance Comparison Analysis Features Extraction Methods for Batik Recognition

207

Ida Nurhaida, Maruli Mamurung, and Aniati Murni Arymurthy

Spectral Domain Cross Correlation Function and Generalized Learning Vector

213

Quantization for Recognizing and Classifying Indonesian Sign Language

Erdefi Rakun, M. Febrian Rachmadi, Andros, and Ken Danniswara

Principal Points Estimation using Mixture Distributions	219
---	-----

Daichi Ueki, Shun Matsuura, and Hideo Suzuki

Developing an Emergent Theoretical Framework for Artificial Pseudo-gene Communication Pathway in DNA Computing	223
---	-----

A. Faizul Shamsudin, Mohd. Adam Suhaimi, Ibrahim Ali Noorbacha, M.

Huweidi, Salam Seth, N. Aishah, A. F. AlyaKhadijah, and Hidayah R.

Hybrid face detection algorithm based on data mining approach	229
---	-----

Edris Fattahi and A. Broumandnia

Undecimated Wavelet Transform based Classification of Human Emotion	235
---	-----

Elangovan Pandian and S. Santhosh Baboo

Fuzzy Classifier of Paddy Growth Stages Based on Synthetic MODIS Data	239
---	-----

Moeljono Widjaja, Arief Darmawan, and Sidik Mulyono

QR Code Augmented Reality Tracking with Merging on Conventional Marker based Backpropagation Neural Network	245
--	-----

Gia M. Agusta, Khodijah Hulliyah, Arini, and Rizal Broer Bahaweres

Exploration of Ruled-Based and Probabilistic Localization Algorithms for Wall-Following Robot	249
--	-----

Samratul Fuady, Yudha Prawira Pane, Adrianto Ravi Ibrahim, and

Widyawardana Adiprawita

Combination of Morphological, Local Binary Pattern Variance and Color Moments Features for Indonesian Medicinal Plants Identification	255
--	-----

Yeni Herdiyeni and Mayanda Mega Santoni

A Syntactical Modeling and Classification for Performance Evaluation of Bali Traditional Dance	261
---	-----

Yaya Heryadi, Ivan Fanany, Aniati Murni

Batik image retrieval based on similarity of shape and texture characteristics	267
--	-----

Abdul Haris Rangkuti, Rizal Broer Bahaweres, and Agus Harjoko

Body Gesture Based Control System for Humanoid Robot	275
<i>M. Anwar Ma'sum, M. Sakti Alvissalim, Fredric Sanjaya, Andros, and Wisnu Jatmiko</i>	
An Implementation of Fuzzy Inference System for Onset Prediction Based on Southern Oscillation Index for Increasing the Resilience of Rice Production against Climate Variability	281
<i>Agus Buono and Mushthofa</i>	
Modification Four Bits of Uncompressed Steganography using Least Significant Bit (LSB) Method	287
<i>Jasril, Ismail Marzuki, and Faisal Rahmat</i>	
Modified Fuzzy-Neuro Generalized Learning Vector Quantization for Early Detection of Arrhytmias	293
<i>M. Ali Akbar, M. Eka Suryana, Elly MatulImah, I M d. Agus, and Wisnu Jatmiko</i>	
Mobile Application for Indonesian Medicinal Plants Identification using Fuzzy Local Binary Pattern and Fuzzy Color Histogram	301
<i>Yeni Herdiyeni and Ni Kadek Sri Wahyuni</i>	
Indoor Human Tracking Application Using Multiple Depth-Cameras	307
<i>Muhamad Risqi Utama Saputra, Widyawan, Guntur Dharma Putra, and Paulus Insap Santosa</i>	
Multi Layer Kernel Learning for Time Series Forecasting	313
<i>Agus Widodo and Indra Budi</i>	
Parallel Cascade Fuzzy Inference System at The Environment Changes, Case Study : Automated Guide Vehicle Robot Using Ultrasonic Sensor	319
<i>Adi Wibowo, Sutikno, Kushartantya, Helmie Arif Wibawa, and Ari Wibisono</i>	
Vision based Automatic Target Scoring System for Mobile Shooting Range	325
<i>Peb Ruswono Aryan</i>	
Agricultural Growth Modeling based on Nonlinear Dynamical System	331
<i>A Sulaiman and M Sadly</i>	
Author Index	