# 2016 International Seminar on Application for Technology of Information and Communication (ISemantic 2016)

Semarang, Indonesia 5-6 August 2016



IEEE Catalog Number: ISBN:

CFP16CUE-POD 978-1-5090-2327-1

## Copyright $\odot$ 2016 by the Institute of Electrical and Electronics Engineers, Inc All Rights Reserved

Copyright and Reprint Permissions: Abstracting is permitted with credit to the source. Libraries are permitted to photocopy beyond the limit of U.S. copyright law for private use of patrons those articles in this volume that carry a code at the bottom of the first page, provided the per-copy fee indicated in the code is paid through Copyright Clearance Center, 222 Rosewood Drive, Danvers, MA 01923.

For other copying, reprint or republication permission, write to IEEE Copyrights Manager, IEEE Service Center, 445 Hoes Lane, Piscataway, NJ 08854. All rights reserved.

\*\*\* This is a print representation of what appears in the IEEE Digital Library. Some format issues inherent in the e-media version may also appear in this print version.

IEEE Catalog Number:CFP16CUE-PODISBN (Print-On-Demand):978-1-5090-2327-1ISBN (Online):978-1-5090-2326-4

#### **Additional Copies of This Publication Are Available From:**

Curran Associates, Inc 57 Morehouse Lane Red Hook, NY 12571 USA Phone: (845) 758-0400

Fax: (845) 758-2633

E-mail: curran@proceedings.com Web: www.proceedings.com



### **Table of Contents**

Developing Educational Game for Collaborative Learning
Parallel Algorithm to Find Collision in Merkle-Damgard Construction with Fixed Point for
2n=2 k Work7
Pitch Angle Controller Design on the Wind Turbine with Permanent Magnet
Synchronous Generator (PMSG) Base on Firefly Algorithms (FA)13
The Comparison of Optimization for Active Steering Control on Vehicle Using PID
Controller Based on Artificial Intelligence Techniques
Recurrent Gradient Descent Adaptive Learning Rate and Momentum Neural Network for
Rainfall Forecasting
Effects of e-Marketing and Consumer Lifestyle towards the Style of Decision Making in
Online Purchase of Movie Ticket27
Labeling and Finding Missing Pieces of Jigsaw Puzzle33
A Proposed Conceptual Framework for Computer Network Multimedia Learning
Integrated with Direct Problem-Based Learning Approach39
Quantitative Relationship Between Feature Extraction of sEMG and Upper Limb Elbow
Joint Angle44
Classification Method for Prediction of Human Activity Using Stereo Camera51
A Comparative Study of EMD, EWT and VMD for Detecting the Oscillation in Control Loop
58
The Driving Factors of Instagram Utilization for Marketing Efforts in Promoting Student
Owned Online Store64
Multimedia Augmented Reality With Picture Exchange Communication System For
Autism Spectrum Disorder
Performance Evaluation of Compressor Anti-Surge Control Based on Model Predictive
in Ammonia Plant75
Design and experimental verification of platform for the local music curation Using
iBeacon and apps80
SELECTION OF SCHOLARSHIP RECIPIENTS BY USING PROMETHEE METHOD IN
POLYTECHNIC UNGGUL LP3M MEDAN86

Design of Batteries Charging by Charge Management Concepts on Photovoltaic	
Standalone System	.93
Transmission Usage Allocation Based on Power Factor Using Distribution Factor	
Method for Deregulated Electricity Supply	.99
Study on Marine Current with Approach of a Numerical Model for Marine Current Power	
Plant (PLTAL) in the Bangka Strait North Sulawesi	.104
Reducing Mobile Device Energy Consumption in Transmitting Multimedia Content by	
Arranging Transport Protocol Load	.111
Reducing Multimedia Transmission Delay by Shortening TCP Acknowledgement Route	.114
pandaisejarah:Toward Implementation of Indonesian History with Teaching Pedagogy	.N/A
Sequential - Storage of Differences Approach in Medical Image Data Compression for	
Brain Image Dataset	.122
Electronic Road Pricing System Prototype	.126
Evaluation of Classification Methods for Indonesian Text Emotion Detection	.130
Design and Analysis of Non-Invasive Blood Glucose Levels Monitoring	.134
Web-based Ranking Signature Using Cluster Retrival Similarity	.138
Designing Intelligent Fishcarelab System (IFS) as Modern Koi Fish Farming System	.142
Load Frequency Control (LFC) of Micro-hydro Power Plant with Capacitive Energy	
Storage (CES) using Bat Algorithm (BA)	.147
Face Recognition using 3D GLCM and Elman Levenberg Recurrent Neural Network	.152
Simulation of Marketplace Customer Satisfaction Analysis Based on Machine Learning	
Algorithms	.157
Comparative Analysis of Machine Learning KNN, SVM, and Random Forests Algorithm	
for Facial Expression Classification	.163
Portal System for Indonesian Online Newspaper - Based Feed Parser SimplePie	.169
Analysis of Three Paralel Waveguides Using Coupled Mode Theory and the Method of	
Lines	.174
Motion-based Less Significant Frame for Improving LSB-based Video Steganography	.179
Simulation Multi Behavior NPCs in Fire Evacuation using Emotional Behavior Tree	.184
Determining Elearning Critical Success Factor At Sebelas Maret University Using	
Analytical Hierarchy Process (AHP)	.191
SIGN LANGUAGE INTERPRETER HAND LISING OPTICAL-FLOW	197

Delivery Zone Application by Using Private Expedition Services in the Online Shop	.202
Block Cipher and Stream Cipher Algorithm Performance Comparison in a Personal VPN	
Gateway	.207
Linked Warning Criterion on Ontology-Based Key Performance Indicators	.211
Generating Test Data Using Ant Colony Optimization (ACO) Algorithm and UML State	
Machine Diagram in Gray Box Testing Approach	.217
APPLICATION of VOLTAGE CONTROLLER with BUCK-BOOST CONVERTER MODEL PLTB	
(the GORLOV TURBINE) to MAXIMIZE POWER OUTPUT	.223
Design of Low Voltage Arcing Identification Based on Wavelet Transform	.229
Segmentation and distribution of watershed using K-Modes Clustering Algorithm and	
Davies-Bouldin Index based on Geographic information	
System (GIS)	.235
Determination of Priority Parameter for Classification of Poverty using Chi-Square	
method and Crammer's V Correlation	.247
Line Hand Feature-based Palm-print Identification System Using Learning Vector	
Quantization	.253
Power Quality Analysis of Variable Frequency Drives Connected to a Reactively	
Compensated Mixed Load System	.261
Analysis and Review of DC Microgrid Implementations	.241
Rectenna Development Aspects for Solar Powered Satellite Energy	
Reception in Indonesia	.267
Comparison of Maintainability and Flexibility on Open Source LMS	.273
The Optimization of The Weblog Central Cluster Using The Genetic K-means Algorithm	.278
Filter Design of PWM AC Chopper On Soft Starting Application 3 Phase Induction Motors	
	.285
Development of Auto Tracking and Target Locking on Static Defence Based on Machine	
Vision	.290
Improving Sperms Detection and Counting using Single Gaussian Background	
Subtraction	.295
Software Reliability Prediction based on Support Vector Regression with Binary Particle	
Swarm Optimization for Model Mining	.300

### 2016 International Seminar on Application for Technology of Information and Communication

Implementing Digital Signature for the Secure Electronic Prescription Using QR-Code	
Based on Android Smartphone	.306
A Robust Image Watermarking Using Hybrid DCT and SLT	.312
Pattern Reduction Enhanced Ant Colony Optimization Clustering Algorithm	.317
The Prototype of Automated Doors and Windows by Using Voice Commands	.323
Berbakti : An Elderly Apps for Strengthen Parent-Children Relationship in Indonesia	.327
Optical Network Design For 4G Long Term Evolution Distribution Network In Sleman	.332
Solar Power Supply For Zigbee Wireles Sensor Network	.336
Hidden Markov Model of Cough from Pediatric Patients with Respiratory Infections	.341