

2017 International Conference on Soft Computing, Intelligent System and Information Technology (ICSIIT 2017)

**Denpasar, Bali, Indonesia
26-29 September 2017**



**IEEE Catalog Number: CFP17M16-POD
ISBN: 978-1-4673-9900-5**

**Copyright © 2017 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:	CFP17M16-POD
ISBN (Print-On-Demand):	978-1-4673-9900-5
ISBN (Online):	978-1-4673-9899-2

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

CURRAN ASSOCIATES INC.
proceedings
.com

2017 International Conference on Soft Computing, Intelligent System and Information Technology

ICSIIT 2017

Table of Contents

Preface.....	.xi
Conference Organization.....	.xii
Program Committee.....	.xiii
Reviewers.....	.xv

Classification and Correlation Techniques

Gesture Recognition for Indonesian Sign Language Systems (ISLS) Using Multimodal Sensor Leap Motion and Myo Armband Controllers Based on Naïve Bayes Classifier	1
<i>Khamid, Adhi Dharma Wibawa, and Surya Sumpeno</i>	
Waah: Infants Cry Classification of Physiological State Based on Audio Features	7
<i>Ramon L. Rodriguez and Susan S. Caluya</i>	
Fuzzy Clustering and Bidirectional Long Short-Term Memory for Sleep Stages Classification	11
<i>Intan Nurma Yulita, Mohamad Ivan Fanany, and Aniaty Murni Arymurthy</i>	
MFCC Feature Classification from Culex and Aedes Aegypti Mosquitoes Noise Using Support Vector Machine	17
<i>Achmad Lukman, Agus Harjoko, and Chuan-Kay Yang</i>	
Automatic Chord Arrangement with Key Detection for Monophonic Music	21
<i>Bor-Shen Lin and Ting-Chun Yeh</i>	
Credit Scoring Refinement Using Optimized Logistic Regression	26
<i>Hendri Sutrisno and Siana Halim</i>	
Anomaly Detection System Based on Classifier Fusion in ICS Environment	32
<i>Jan Vávra and Martin Hromada</i>	

Efficient Object Recognition with Multi-directional Features in Urban Scenes	39
<i>Ryo Kawanami and Kousuke Matsushima</i>	

Feature Extraction and Image Recognition Methods

Timor Leste Tais Motif Recognition Using Wavelet and Backpropagation	45
<i>Vasio Sarmento Soares, Albertus Joko Santoso, and Djoko Budyanto Setyohadi</i>	
The Model and Implementation of Javanese Script Image Transliteration	51
<i>Anastasia Rita Widiarti, Agus Harjoko, Marsono, and Sri Hartati</i>	
Human Activity Recognition by Using Nearest Neighbor Algorithm from Digital Image	58
<i>Muhammad Ihsan Zul, Istianah Muslim, and Luqman Hakim</i>	
Night to Day Algorithm for Video Camera	62
<i>Stefan Jack Lionardi, Mariëlle Fransen, and Andreas Handojo</i>	
Arca Detection and Matching Using Scale Invariant Feature Transform (SIFT) Method of Stereo Camera	66
<i>Aviv Yuniar Rahman, Surya Sumpeno, and Mauridhi Hery Purnomo</i>	
The Application of Deep Convolutional Denoising Autoencoder for Optical Character Recognition Preprocessing	72
<i>Christopher Wiraatmaja, Kartika Gunadi, and Iwan Njoto Sandjaja</i>	
Acne Segmentation and Classification Using Region Growing and Self-Organizing Map	78
<i>Gregorius Satia Budhi, Rudy Adipranata, and Ari Gunawan</i>	

Algorithms for Intelligent Computation

Extended Concept of Generalized Fuzzy Rough Sets on Asymmetric Fuzzy Coverings	84
<i>Rolly Intan</i>	
The Proposal of the Software for the Soft Targets Assessment	90
<i>Lucia Duricova, Martin Hromada, and Jan Mrazek</i>	
Application of Artificial Intelligence (AI) in Search Engine Optimization (SEO)	96
<i>Yodhi Yuniarthe</i>	
Spatial Model Design of Landslide Vulnerability Early Detection with Exponential Smoothing Method Using Google API	102
<i>Kristoko Dwi Hartomo, Sri Yulianto, and Joko Ma'ruf</i>	
Measures of Dependency in Metric Decision Systems and Databases	107
<i>Anh Duy Tran, Somjit Arch-int, and Ngamnij Arch-int</i>	
Multiple Scattered Local Search for Course Scheduling Problem	114
<i>Ade Jamal</i>	

The Software Proposes for Management and Decision Making at Process Transportation	120
<i>Jan Mrazek, Lucia Duricova, and Martin Hromada</i>	

Distributed Systems and Computer Networks

A Self-Adaptive Architecture with Energy Management in Virtualized Environments	124
<i>I Made Murwantara, Behzad Bordbar, and João Bosco Ferreira Filho</i>	
Nanoservices as Generalization Services in Service-Oriented Architecture	131
<i>Sutrisno, Frans Panduwinata, and Pujianto Yugopuspito</i>	
Automated Concurrency Testing for Cloud-Based Polling Systems	138
<i>Hans Dulimarta</i>	
Low-Overhead Multihop Device-to-Device Communications in Software Defined Wireless Networks	144
<i>Riyanto Jayadi and Yuan-Cheng Lai</i>	
A Secure Anonymous Authentication Scheme for Roaming Service in Global Mobility Network	150
<i>Kuo-Yang Wu, Yo-Hsuan Chuang, Tzong-Chen Wu, and Nai-Wei Lo</i>	
Linux PAM to LDAP Authentication Migration	155
<i>Justinus Andjarwirawan, Henry Novianus Palit, and Julio Christian Salim</i>	
Exploratory Research on Developing Hadoop-Based Data Analytics Tools	160
<i>Henry Novianus Palit, Lily Puspa Dewi, Andreas Handojo, Kenny Basuki, and Mikiavonty Endrawati Mirabel</i>	

Mobile and Pervasive IoT Applications

Human Heart Rate Detection Application	167
<i>Semuil Tjiharjadi and AUFAR Fajar</i>	
Near Field Communication Technology in Delivering Information in Museums	173
<i>Djoni Haryadi Setiabudi, Ryan Christian Wiguno, and Henry Novianus Palit</i>	
Android Application for Monitoring Soil Moisture Using Raspberry Pi	178
<i>Lily Puspa Dewi, Justinus Andjarwirawan, and Robin Putra Wardojo</i>	
Development of Mobile Indoor Positioning System Application Using Android and Bluetooth Low Energy with Trilateration Method	185
<i>Agustinus Noertjahyana, Ignatius Alex Wijayanto, and Justinus Andjarwirawan</i>	

Assessments of Integrated IS/IT

The Proposal of United Crisis Management Information Systems of the Czech Republic	190
<i>Katerina Vichova, Martin Hromada, and Ludek Lukas</i>	
The Analysis of Academic Information System Success: A Case Study at Instituto Profissional De Canossa (IPDC) Dili Timor-Leste	196
<i>Apolinario Dos Santos, Albertus Joko Santoso, and Djoko Budiyanto Setyohadi</i>	
Identification of Factors Influencing the Success of Hospital Information System (SIRS) by Hot-Fit Model 2006: A Case Study of RSUD Dr Samratulangi Tondano, Minahasa Regency, North Sulawesi	202
<i>Frendy Rocky Rumambi, Albertus Joko Santoso, and Djoko Budiyanto Setyohadi</i>	
The Alignment of IT and Business Strategy at ROC Leeuwenborgh	208
<i>Frederick Wonges, Jack Zijlmans, and Leo Willyanto Santoso</i>	
Development of Capability Assessment Model of IT Operation Management Process with Organizational Behavior	214
<i>Luh Made Wisnu Satyaninggrat and Kridanto Surendro</i>	
Exploring Critical Success Factors of Mobile Learning as Perceived by Students of the College of Computer Studies – National University	220
<i>Bernie S. Fabito</i>	
Identifying Characteristics and Configurations in Open Source ERP in Accounting Using ASAP: A Case Study on SME	227
<i>Agung Terminanto and Achmad Nizar Hidayanto</i>	

Simulation and Virtual Reality Applications

The Real Time Training System with Kinect: Trainer Approach	233
<i>Ivana Valentine Masala and Apriandy Angdresey</i>	
3D LIDAR City Model Application and Marketing Plan Development	238
<i>Kevin Sanjaya, Frank Henning, and Kristo Radion Purba</i>	
Periodic Review Inventory Model Simulations for Imperfect Quality Items and Stochastic Demand	243
<i>Gede A. Widyadana, Audrey T. Widjaja, and Irena Liong</i>	
Simulation on Crowd Mobility of Moving Objects Using Multi-agent and ClearPath	250
<i>Baihaqi Siregar, Agnes Irene Silitonga, Erna Budhiarti Nababan, Ulfi Andayani, and Fahmi Fahmi</i>	
Truck Management Integrated Information System in a Shipping Line Company	257
<i>Arnold Samuel Chan and I Nyoman Sutapa</i>	

Simulation of Atmosphere in Trowulan during the Golden Era of Majapahit Using Virtual Reality	263
<i>Daniel Kusuma, Rudi Adipranata, and Erandaru</i>	
Development of Interactive Learning Media for Simulating Human Digestive System	270
<i>Kristo Radion Purba, Liliana, and Daniel Runtulalu</i>	
Development of Interactive Learning Media for Simulating Human Blood Circulatory System	275
<i>Kristo Radion Purba, Liliana, and Yohanes Nicolas Paulo Kwarrie</i>	

Smart Assistive Technologies

Fall Detection Application Using Kinect	279
<i>Kartika Gunadi, Liliana, and Jonathan Tjitrokusmo</i>	
Driver Drowsiness Detection Using Visual Information on Android Device	283
<i>Aldila Riztiane, David Habsara Hareva, Dina Stefani, and Samuel Lukas</i>	
Epileptic Alert System on Smartphone	288
<i>Aziis Yudha Adwitiya, David Habsara Hareva, and Irene Astuti Lazarusli</i>	
Elderly Healthcare Assistance Application Using Mobile Phone	292
<i>Andreas Handojo, Tioe Julio Adrian Sutiono, and Anita Nathania Purbowo</i>	
Socially-Enhanced Variants of Mobile Bingo Game: Towards Personalized Cognitive and Social Engagement among Seniors	297
<i>Chien-Sing Lee, Shanice Wei-Ling Chan, and Sheng-Yee Guy</i>	

Smart Mobile Applications

M-Guide: Hybrid Recommender System Tourism in East-Timor	303
<i>Jaime da Costa Lobo Soares, Suyoto, and Albertus Joko Santoso</i>	
M-Guide: Recommending Systems of Food Centre in Buleleng Regency	310
<i>Komang Ananta Wijaya, Suyoto, and Albertus Joko Santoso</i>	
Empowering Public Secondary Schools on Disaster Response and Recovery: A Framework for the Development of Helpline Mobile Application	315
<i>Odette Saavedra, Matthew C. Abrera, Mickaela Carla L. Waniwan, Curly Kale C. Dava, and Bernie S. Fabito</i>	
A Framework Mobile Game Application that Teaches Parts of Speech in Grade 3 in Filipino	321
<i>John Erasmus Correa, Jastine Gamboa, Mark Edison Lavapie, Edzel Uy, and Ramon L. Rodriguez</i>	
iSagip: A Crowdsourc Disaster Relief and Monitoring Application Framework	327
<i>Auxesis Jacobi M. Schwab, John Eduard C. Omaña, Kent V. Roazol, Ted Anthony Y. Abe, and Bernie S. Fabito</i>	

Case Studies of Knowledge Discovery and Management

Executive Dashboard as a Tool for Knowledge Discovery	331
<i>Nyoman Karna</i>	
Data Mining Applications for Sales Information System Using Market Basket Analysis on Stationery Company	337
<i>Alexander Setiawan, Gregorius Satia Budhi, Djoni Haryadi Setiabudi, and Ricky Djunaidy</i>	
A Knowledge Management-Extended Gamified Customer Relationship Management System	341
<i>Chien-Sing Lee, Jun-Jie Foo, Vinudha a/p Jeya Sangar, Pei-Yee Chan, Weng-Keen Hor, and Eng-Keong Chan</i>	
Web Based Customer Relationship Management Application for Helping Sales Analysis on Bike Manufacturer	347
<i>Anita Nathania Purbowo, Yulia, and Agustinus Ivan Suryadi</i>	
Replenishment Strategy Based on Historical Data and Forecast of Safety Stock	353
<i>Allysia Ongkicyntia and Jani Rahardjo</i>	
On Estimation and Prediction of Simple Model and Spatial Hierarchical Model for Temperature Extremes	359
<i>Indriati Njoto Bisono</i>	
Author Index	363