

# **2019 International Conference on Computer, Control, Informatics and its Applications (IC3INA 2019)**

**Tangerang, Indonesia  
23 – 24 October 2019**



**IEEE Catalog Number: CFP19YAD-POD  
ISBN: 978-1-7281-5541-8**

**Copyright © 2019 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:	CFP19YAD-POD
ISBN (Print-On-Demand):	978-1-7281-5541-8
ISBN (Online):	978-1-7281-5540-1

**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](mailto:curran@proceedings.com)  
Web: [www.proceedings.com](http://www.proceedings.com)

CURRAN ASSOCIATES INC.  
**proceedings**  
.com

# Contents

<b>Keynote: Building Smart Cities with Knowledge Graphs</b> <i>Anna Fensel</i>	<b>1</b>
<b>Keynote: Computer Science 4.0: Old wine in new bottles?</b> <i>Juan Miguel Gómez Berbís</i>	<b>2</b>
<b>Keynote: Detecting and visualizing the operation of cyber troops and computational propaganda that shape public opinion during the KPK law revision process</b> <i>Ismail Fahmi</i>	<b>3</b>
<b>Evaluation of Random Forest model for forest fire prediction based on climatology over Borneo</b> <i>Arnida L. Latifah, Intan N. Wahyuni, Ayu Shabrina, Rifki Sadikin</i>	<b>4</b>
<b>Deep Learning for Plant Classification in Precision Agriculture</b> <i>Carlos A. Mamani Diaz, Edgar E. Medina Castaneda, Carlos A. Mugruza Vassallo</i>	<b>9</b>
<b>Cross-validation Metrics for Evaluating Classification Performance on Imbalanced Data</b> <i>Ni Wayan Surya Wardhani, Masithoh Yessi Rochayani, Atiek Iriany, Agus Dwi Sulistyono, Prayudi Lestantyo</i>	<b>14</b>
<b>Generalized Filter-bank Features for Robust Speech Recognition Against Reverberation</b> <i>Hilman F. Pardede, Vicky Zilvan, Dikdik Krisnandi, Ana Heryana, R. Budiarianto S. Kusumo</i>	<b>19</b>
<b>Gender Inference Based on Indonesian Name and Profile Photo</b> <i>Lindung Parningotan Manik, Arida Ferti Syafiandini, Hani Febri Mustika, Zaenal Akbar, Yan Rianto</i>	<b>25</b>
<b>Multi-Condition Training on Deep Convolutional Neural Networks for Robust Plant Diseases Detection</b> <i>R. Sandra Yuwana, Endang Suryawati, Vicky Zilvan, Ade Ramdan, Hilman F. Pardede, Fani Fauziah</i>	<b>30</b>
<b>Reduce Rounding Off Errors in Information Dispersal Algorithm</b> <i>Ardhi Wijayanto, Bambang Harjito</i>	<b>36</b>
<b>Joint Transaction-Image Steganography for High Capacity Covert Communication</b> <i>Akbari Indra Basuki, Didi Rosiyadi</i>	<b>41</b>
<b>Algorithm Comparisons among Space Time Volume Velocimetry, Horn-Schunk, and Lucas-Kanade for the Analysis of Water Surface Velocity Image Sequences</b> <i>Bernadus H. Sirenden, Aniasi Murni Arymurthy, Petrus Mursanto, Sensus Wijonarko</i>	<b>47</b>
<b>On Image Compression Techniques Evaluation in The Digital Xylarium System</b>	<b>53</b>

*Deden Sumirat Hidayat, Lindung Parningotan Manik, Yulia Aris Kartika, Esa Prakasa, Bambang Sugiarto, Yan Rianto*

<b>Experimental Performance Evaluation of Computer Vision for an Upper Limbs Rehabilitation Robot</b>	<b>59</b>
<i>Estiko Rijanto, Erik Adiwiguna, Latif Rozaqi, Aryo Putro Sadono, M. Hafil Nugraha</i>	
<b>Efficient Human Detection Algorithm using Color &amp; Depth information with Accurate Outer Boundary Matching</b>	<b>64</b>
<i>Puji Lestari, Hans-Peter Schade</i>	
<b>Human Detection from RGB Depth Image using Active contour and Grow-cut Segmentation</b>	<b>70</b>
<i>Puji Lestari, Hans-Peter Schade</i>	
<b>Design of Smart Footwear Information System for Measuring Gait Parameters</b>	<b>76</b>
<i>Kadek Heri Sanjaya, Latif Rozaqi, Kristina Asih Damayanti, Marchellina Maria Laurentius, Hamilaturrohmah</i>	
<b>Keynote: Air pollution source identification by using Neural Network with Bayesian Optimization</b>	<b>82</b>
<i>Leu Fang-Yie</i>	
<b>Toward Improvement of Cloud Computing Scheduling Algorithms to Monetary Cost and Makespan Time Efficiency</b>	
<i>Heru Susanto, Uus Khusni, Leu Fang-Yie</i>	
<b>Customer Satisfaction Comparison: Travel Agent E-Commerce vs Airlines E-Ticketing in Indonesia</b>	<b>88</b>
<i>Yakob Utama Chandra, Ernawaty, Michael Jhonsons</i>	
<b>Acceptance of The FISTA (Financial System of Telkom Access) Application System Based on Technology Acceptance Model</b>	
<i>Dewi Azizah Arham, Sfenrianto</i>	
<b>Mapping the Pattern of Spread of Tuberculosis Cases using Spatio-Temporal Approach in Makassar - South Sulawesi</b>	<b>99</b>
<i>Muhammad Resha, Ansar Suyuti, Rhiza S Sadjad, Muhammad Niswar</i>	
<b>Managing Multi-Services for Multi-Users in Heterogeneous Cluster Computing System</b>	<b>103</b>
<i>Andria Arisal, Syam Budi Iryanto, Zaenal Akbar</i>	
<b>Implementing Graph Based Rank on Online News Media Keyword Extraction</b>	<b>108</b>
<i>Arida Ferti Syafiandini, Hani Febri Mustika, Lindung Parningotan Manik, Yan Rianto, Zaenal Akbar</i>	
<b>Implementation of Decision Tree C4.5 for Big Five Personality Predictions with TF-RF and TF-CHI<sup>2</sup> on Social Media Twitter</b>	<b>114</b>
<i>Willy, Erwin B. Setiawan, Fida N. Nugraha</i>	
<b>Searching Region of Interest from News Website using Steepest Ascent Hill Climbing Algorithm</b>	<b>120</b>
<i>Hani Febri Mustika, Lindung Parningotan Manik, Arida Ferti Syafiandini, Zaenal Akbar, Yan Rianto</i>	
<b>Modeling with SoaML Applied for Smart Room Based on Internet of Things</b>	<b>125</b>

<i>Irfan Asfy Fakhry Anto, Aris Munandar, Muhammad Ilham Rizqyawan</i>	
<b>Relation Classification for Indonesian Music News Sentences</b>	<b>129</b>
<i>Muhammad Insan Al-Amin, Masayu Leylia Khodra</i>	
<b>An Enhanced Sensor Placement Strategy to Quantify Small Leaks in Water Distribution Networks using Weighted Lean Graphs</b>	<b>134</b>
<i>Ary Mazharuddin Shiddiqi, Waskitho Wibisono, Choiru Zhain</i>	
<b>Assessing the Impact of a New Released Medicine Towards Medication Strategy Using Graph Based Visualization</b>	<b>140</b>
<i>Purnomo Husnul Khotimah, Masatoshi Yoshikawa, Akihiro Hamasaki, Osamu Sugiyama</i>	
<b>Design and Implementation of Temperature and Humidity Control System in Oyster Mushroom Cultivation using Fuzzy Logic Controller</b>	<b>146</b>
<i>Asep Najmurrokhman, Kusnandar, Udin Komarudin, Ahmad Daelami, Fajar Adiputra</i>	
<b>Discrete-time Sliding Mode Controller for Multivariable System of 3 DOF Laboratory Helicopter</b>	<b>151</b>
<i>Edi Kurniawan, Suryadi Suryadi, Imam Affandi</i>	
<b>Automatic pH and Humidity Control System for Hydroponics Using Fuzzy Logic</b>	<b>156</b>
<i>Hanif Fakhurroja, Syahidul Akbar Mardhotillah, Oka Mahendra, Aris Munandar, Muhammad Ilham Rizqyawan, Rian Putra Pratama</i>	
<b>Design of Servo Motor Controller Device for Antenna Stabilization Based on PID Controller</b>	<b>162</b>
<i>Hendri Maja Saputra, Abdurrahman Nurhakim, Midriem Mardanies</i>	
<b>Hydroponic Nutrient Control System based on Internet of Things and K-Nearest Neighbors</b>	<b>166</b>
<i>Demi Adidrana, Nico Surantha</i>	
<b>A Prototype of an Arduino-Based Protection System to Overcome Voltage Fluctuations</b>	<b>172</b>
<i>Joni Welman Simatupang, Laurentius Michael Andrian, William Zhuang, Heri Prasetyo</i>	
<b>Detection of Gas Leaks Using The MQ-2 Gas Sensor on the Autonomous Mobile Sensor</b>	<b>177</b>
<i>I Kadek Nuary Trisnawan, Agung Nugroho Jati, Novera Istiqomah, Isro Wasisto</i>	
<b>An ICT Platform Design for Traceability and Big Data Analytics of Sugarcane Harvesting Operation</b>	<b>181</b>
<i>Ageng Setiawan, Wahyuddin S, Estiko Rijanto</i>	
<b>Implementation of Mobile Sensor Navigation System Based on Adaptive Monte Carlo Localization</b>	<b>187</b>
<i>Isro Wasisto, Novera Istiqomah, I Kadek Nuary Trisnawan, Agung Nugroho Jati</i>	