

2019 International Conference on Mechatronics, Robotics and Systems Engineering (MoRSE 2019)

**Bali, Indonesia
4 – 6 December 2019**



**IEEE Catalog Number: CFP19MOR-POD
ISBN: 978-1-7281-3985-2**

**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:	CFP19MOR-POD
ISBN (Print-On-Demand):	978-1-7281-3985-2
ISBN (Online):	978-1-7281-3984-5

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

TABLE OF CONTENT

	Page
Welcome Message	iii
Conference Organization	iv
Technical Program Committee and Reviewers	vi
Technical Sessions	viii
Table of Content	xvii
Designing a Testbed to Assess Secure Control of Cyber-Physical Systems	1
<i>Park, E.; Chan, K.C.</i>	
Modeling and Simulation of a Multi-Robot System Architecture	8
<i>Sadik, A. R.; Goerick, C.; Muehlig, M.</i>	
Brain Tumor Classification with Fisher Vector and Linear Classifier for T1-weighted Contrast-enhanced MRI Images	15
<i>Mubarok, A. F. A.; Thias, A. H.; Handayani, A.; Danudirdjo, D.; Rajab, T. E.</i>	
Development of On-Demand Controller for Continuous Positive Airways Pressure	20
<i>Amrulloh, Y. A.; Hisif, B. A.; Wati, D. A. R.</i>	
Power Coefficient Analysis of Savionus Wind Turbine Using CFD Analysis	24
<i>Trisakti, M; Halim, L.; Arthaya, B. M.</i>	
Parking Space Optimization Using Simplex Method Linear Programming	30
<i>Crisostomo, C. I. C.; Baldovino, R. G.</i>	
Comparison of Neural Biomarker Assessment Methods for Early Detection of Alzheimer's Disease	34
<i>Yang, D.; Hong, K.-S.</i>	
Devising A New Portable Electronic Firing System	40
<i>Ali, M.; Wijayanto, T.</i>	
A Millimeter-Wave Phased Array for Communication and Sensing Systems	45
<i>Huynh, C.; Lee, J.; Bae, J.; Lee, D.; Hsiao, M. J.; Nguyen, C.</i>	
Mamdani based Fuzzy Logic Controller for A Wheeled Mobile Robot with Obstacle Avoidance Capability	49
<i>Najmurokhman, A.; Kusnandar; Komarudin, U.; Sunubroto; Sadiyahoko, A.; Iskanto, T. Y.</i>	

Mapping and Navigation with Four-wheeled Omnidirectional Mobile Robot Based on Robot Operating System	54
<i>Quang, H.Q.; Manh, T. N.; Manh, C. N.; Tien, D. P.; Van, M. T.; Kim, D. H. T.; Thanh, V. N. T.; Duan, D. H.</i>	
Robust Control of Infinite-dimensional Mechatronic Systems	60
<i>Iftar, A.</i>	
Preliminary Design of Seed Spreading Robot as an Educational Mechatronic Project	64
<i>Arthaya, B. M.; Naa, C. F.; Roinaldo</i>	
Closed Loop System Identification of a DC Motor using Fractional Order Model	69
<i>Shah, P.; Sekhar, R.</i>	
Efficient Pavement Crack Area Classification Using Gaussian Mixture Model Based Features	75
<i>Ogawa, S.; Matsushima, K.; Takahashi, O.</i>	
Analysis of Power, Temperature, and Performance on Mobile Application Processor	81
<i>Lee, D. H., Hyun Hak Cho, H. H.; Jeong, O. H.</i>	
Experimental Implementation of Fixed-Time Leader-Follower Axial Alignment Tracking	86
<i>Anggraeni, P.; Candra, W. A.; Defoort, M.; Djemai, M.</i>	
Security System ATM Machine with One-Time Passcode on M-Banking Application	92
<i>Munadi, R.; Irawan, A. I.; Romiadi; Y. F.</i>	
ARX/ARMAX Modeling and Fractional Order Control of Surface Roughness in Turning Nano-Composites	97
<i>Sekhar, R.; Singh, T. P.; Pritesh Shah, P.</i>	
Cybersickness Evaluation While Using Driving Simulator in a Head-Mounted Display Environment	103
<i>Suwarno, D. C. D.; Wijayanto, T.; Trapsilawati, F.</i>	
Crack Detection Using Spectral Clustering: Self-Tuning Considering Crack Feature and Connections	107
<i>Shiotsuka, D.; Matsushima, K.; Takahashi, O.</i>	
Comparative Study for PV Power Stabilization Technology Using Matlab Simulink	112
<i>Garniwa, I.; Kuncoro, M.; Darussalam, R.</i>	
VR Based Visualization of Robotic Workcells Using Cryengine	118
<i>Karaoğlu, E. O.; Tükel, D.; Arthaya, B. M.</i>	
Design of Propeller Turbine for Micro-Hydro-Electric Power Plant at Cikapundung River - Bandung	122

<i>Sudiro, R. D.; Arthaya, B. M., Halim, L.</i>	
Power Electronics in the Engineering Field: A Perception Comparison Between Undergraduate and Graduate Students Using Fuzzy Logic Type 2 Signal Detection Theory	128
<i>Reyes, G. E. B.; Ponce, P.; Ayyanar, R.</i>	
DenseNet with Spatial Pyramid Pooling for Industrial Oil Palm Plantation Detection	134
<i>Abdani, S. R.; Zulkifley, M. A.</i>	
Modeling of Tumor Growth: An Incremental Development Framework	139
<i>Iftekhhar, L.; Islam, T.; Kamal, M. S.; Amir, S.</i>	
Development of Virtual Firefighting Robots Using Breitenberg and Fuzzy Logic Methods	145
<i>Putra, M. D.; Nazaruddin, Y. Y.</i>	
Gain-Scheduled Control for Active Suspension Using Estimated Uncertain Parameters	151
<i>Matsuura, T.; Matsushita, M.; Chen, G.; Takami, I.</i>	
Integration of Blockchains with Management Information Systems	157
<i>Chan, K. C.; Zhou, X.; Gururajan, R.; Zhou, X.; Ally, M.; Gardiner, M.</i>	
Game-Theoretic and Genetic-based Approach for Cooperative Mission-oriented Swarms of Drones	163
<i>Saputro, N.</i>	
Simulation of a Sliding Mode Controller for a Uniaxial Seismic Shake Table	169
<i>Crisostomo, C. I. C.; Malalis, R. V. C.; Saysay, R. S.; Baldovino, R. G.</i>	
Adaptive Control for Jib Crane System with Rope Hoisting and Uncertain Parameters	174
<i>Ishikura, S.; Chen, G.; Takami, I.</i>	
Initial Concept for Increasing Polycrystalline Fixed Solar Panel Efficiency with Water Treatments	180
<i>Taruna, C.; Halim, L.; Arthaya, B. M.</i>	
Attitude Control of Satellites Actuated by Hybrid Actuators	186
<i>Giri, D. K.</i>	
Adaptive Dynamic Surface Control for Car Driving Simulator Based on Artificial Neural Network	192
<i>Tien, K. N.; Kim, D. H. T.; Manh, T. N.; Manh, C. N.; Bach, N. P. V.; Quang, H. D.</i>	
Miniaturization of Circular Resonators Waveguide at SHF Frequency Using Floral Foam Electromagnetic Engineering	198
<i>Andhita, F. R.; Yusuf, R. A. M.; Maulana, M. H.; Ludyati, H.</i>	

Performance of SC-FDMA for LTE Uplink Under Different Modulation Schemes	202
<i>Roy, J. S.; Mishra, S. S.</i>	
Collector: A Vision-Based Semi-Autonomous Robot for Mangrove Forest Exploration and Research	207
<i>Shahria, T.; Aimon Rahman, A.; Hasib Zunair, H.; Shoaib Bin Aziz, S. B.</i>	
Arduino Uno-Based Maximum Power Point Tracking for PV Module Using Perturb and Observe Algorithm	213
<i>Batu, A. O.; Soepardjo, H.; Prajitno, P.</i>	
Brain Tumor Semi-automatic Segmentation on MRI T1-weighted Images using Active Contour Models	217
<i>Thias, A. H.; Mubarak, A. F. A.; Handayani, A.; Danudirdjo, D.; Rajab, T. E.</i>	
Bottled Water Identification & Fraud Detection Using Spectroscopy & Convolutional Neural Network	222
<i>Thai, P. Q.; Dat, P. T.</i>	
Automatic Pavement Crack Detection Using Multi-Scale Image and Neighborhoods Information	227
<i>Komori, T.; Matsushima, K.; Takahashi, O.</i>	
Linear Wireless Sensor Networks for Cathodic Protection Monitoring of Pipelines	233
<i>Kara, A.; Imran, M. A. A.; Karadag; K.</i>	
Improving Temperature Sensor Accuracy in The IoT Trainer Kit by Linear Regression Method	237
<i>Hariyanto, T.; Rahayu, M.; Satria, F.; Fadhlán, M. Y.</i>	
Template-Based Space-Saving Approach for SMS Storage in A Server	241
<i>Newaz, S.; AUddin, A. H.; Islam, A. B. M. A. A.</i>	
Controlling an Exoskeleton with EMG Signal to Assist Load Carrying: A Personalized Calibration	246
<i>Treussart, B.; Geffard, F.; Vignais, N.; Marin, F.</i>	
Design and Kinematics Analysis of Parallel Robotic Arm for Urological Surgery	253
<i>Tan, K.; Shi, H.; Wang, Y.; Yang, L.</i>	
Analysis of RNA-Seq Data of 10000 Samples of Single-cell Transcriptome	259
<i>Afroze, T.; Rahman, A.; Sarkar, M.; Sadique, A.; Alam, J.; Rahman, S.; Hossain, M.</i>	
Energy-Based Modeling and Swing Up Control Synthesis of an Inverted Pendulum System	265
<i>Chandra, J.; Tamba, T. A.; Sadiyoko, A.</i>	
Generic Linear ESO for the State Observation of Unknown Nonlinear SISO Systems	270
<i>Amokrane, F.; Piat, E.; Abadie, J.; Drouot, A.; Escareno, J.</i>	