

2020 International Conference on Applied Science and Technology (iCAST 2020)

**Padang, Indonesia
24 - 25 October 2020**



**IEEE Catalog Number: CFP20CAT-POD
ISBN: 978-1-7281-9568-1**

**Copyright © 2020 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:	CFP20CAT-POD
ISBN (Print-On-Demand):	978-1-7281-9568-1
ISBN (Online):	978-1-7281-9567-4

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

CURRAN ASSOCIATES INC.
proceedings
.com

TABLE OF CONTENTS

Fuzzy Logic for Automatic Watering System of Smart Agriculture with IoT	1
<i>M. Udin Harun Al Rasyid, Ahmad Syauqi Ahsan, Mukhammad Fatkhun Najaa</i>	
The Cascade Linear Quadratic Gaussian (LQG) Controller for Automatic Landing Systems in Aircraft	8
<i>Mohammad Abu Jami'in</i>	
The Comparison of Quality Snapper Selection Results Using WASPAS and WP Methods.....	13
<i>Linda Perdana Wanti, Oman Somantri</i>	
Document Encryption Through Asymmetric RSA Cryptography.....	18
<i>I Made Ari Dwi Suta Atmaja, I Nyoman Gede Arya Astawa, Ni Wayan Wisswani, I Made Riyan Adi Nugroho, Putu Wijaya Sunu, I Komang Wiratama</i>	
Economic Dispatch in IEEE 26 Bus System using Quantum Behaved Particle Swarm Optimization.....	22
<i>Prensa Perdana Surya Saputra, Farid Dwi Murdianto, Rifqi Firmansyah, Kukuh Widarsono</i>	
Warning System Design to Detect Suspicious Activities in a Network	27
<i>Fajar Ratnawati, Agus Tedyana</i>	
Vehicle Classification and Violation Detection on Traffic Light Area using BLOB and Mean-Shift Tracking Method	31
<i>Mochamad Mobed Bachtiar, Achmad Rahman Mawardi, Adnan Rachmat Anom Besari</i>	
Arrhythmia and Normal Identification of Electrocardiogram (ECG) Signals	36
<i>Prihatin Oktivasari, S Imam, Riandini, Amy Hamidah Salman, Freddy Haryanto, Suprijadi</i>	
Nutrient Concentration Control System in Hydroponic Plants Based on Fuzzy Logic	42
<i>Nurmahaludin, Gunawan R. Cahyono, Joni Riadi</i>	
Face Detection Model for Thermal Images	48
<i>Hendrick, Surfa Yondri, Rahmat Hidayat, Albar Albar, Hanifa Fitri, Ivan Finiel Bagariang</i>	
Solar Panel Characteristic Tracer for PV Test Solutions.....	52
<i>Isdawimah, Nuha Nadhiroh, A. Damar Aji, Muhammad Rafi</i>	
Low Cost Wireless Sensor Network for Smart Gas Metering using Antares IoT Platform	57
<i>Muhamad Cahyo Ardi Prabowo, Sidiq Syamsul Hidayat, Fitya Luthfi</i>	
Disaster Robot Navigation using Behavior-based Systems.....	63
<i>Son Kuswadi, Mohamad Nasyir Tamara, Bagoes Taufiq Brahmantio, Debynata Sugiharto, Mohammad Nuh</i>	
The Utilization of G-Suite Features Combination on Developing Small Size of Android Application	70
<i>Shumaya Resty Ramadhani</i>	
The Covid-19 Detection with Contactless Method based on Deep Learning	76
<i>Ismail, Fibriyanti, Zass Ressay Aidha, Menhendry, Kamarul Hawari</i>	
A Neural Network Approach in Reducing Offset Printing Spoilages on Solid Bleached Boards.....	81
<i>Tristan Joseph C. Limchesing, Renann G. Baldovino, Nilo T. Bugtai</i>	

Implementation of Fuzzy-PI Controller for Constant Voltage Battery Charging System Using Zeta Converter.....	85
<i>Sandra July Prananda, Epyk Sunarno, Indra Ferdiansyah</i>	
Equal Gain Combining and Time-Reversal Precoding for Underwater Acoustic Communication.....	93
<i>Yuning Widiarti</i>	
Object Detection Using Color Dissimilarity Based Segmentation Method.....	99
<i>I Gede Made Karma, I Made Dwi Jendra Sulastra, Jeni Susanti</i>	
Augmented Reality Mobile Application Base On Marker Object.....	104
<i>I Nyoman Gede Arya Astawa, I Made Ari Dwi Suta Atmaja, N G Ap H Saptarini, Sri Andriati Asri, Made Leo Radhitya</i>	
Design and Construction of a Low Cost of Solar Tracker Two Degree of Freedom (DOF) Based On Arduino.....	108
<i>Marthen Dangu Elu Beily, Rusman Sinaga, Zilman Syarif, Mychael G Pae, Rochani Rochani</i>	
Closed Loop System BLDC Motor For Electric-Bike.....	113
<i>Hendi Purnata, Muhamad Yusuf, Sugeng Dwi Riyanto</i>	
Energy Storage System Using Solar Energy Resources to Optimize Charging Process for DC Lighting Nanogrid System	120
<i>Farid Dwi Murdianto, Indhana Sudiharto, Mukhammad Al Adi Fahtuz Zaqki, Kukuh Widarsono, Pressa Perdana Surya Saputra</i>	
Dynamic Obstacle Avoidance on Middle Size League Robot Soccer ERSOW Using Subtargets.....	125
<i>Renardi Adryantoro Priambudi, Iwan Kurnianto Wibowo, Bagus Nugraha Deby Ariyadi, Bima Sena Bayu Dewantara, Mochamad Mobed Bachtiar, Erna Alfi Nurrohmah</i>	
Automatic Guided Vehicle (AGV) Design Using an IoT-based RFID for Location Determination.....	132
<i>Mohd Iqbal, Rosli Omar</i>	
Effect of Turbine Inclination to the Performance of Micro Hydro Power Generator Screw Archimedes.....	138
<i>Ketut Bangse, Ikeh Wiryanta</i>	
Estimating Village Development Index Based on Satellite Imagery Using Machine Learning Application.....	143
<i>Candra Dian Purnawanto, Rani Nooraeni, Nucke Widowati Kusumo Projo</i>	
Optimization of Capacitor Placement in Radial Distribution System Using Integer Encoding Genetic Algorithm.....	148
<i>I Ketut Suryawan, Igna Dwijaya Saputra</i>	
Implementation of Neural Network for the Liver Disease Classification.....	153
<i>Tristan Joseph C. Limchesing, Nilo T. Bugtai, Renann G. Baldovino</i>	
Developing Monitoring System based Internet of Things for Vibration Analysis	157
<i>M. Udin Harun Al Rasyid, Ahmad Rifa'I, Ahmad Syauqi Ahsan</i>	
CUK Converter Using FLC to Manage Power Consumption from PV Directly.....	163
<i>Indhana Sudiharto, Farid Dwi Murdianto, Anang Budikarso, Anjas Wibisana</i>	
Automatic Hull Fracture Detection System Using Template Matching	168
<i>A. Khumaidi, R. Y. Adhitya, E. Julianto</i>	

3D Asset for Web-based Virtual Engineering Platform as Implementation of Industry 4.0	172
<i>Erlangga Hendrika Putra Utama, Dwi Kurnia Basuki, Sritrusta Sukaridhoto</i>	
Application of Object Recognition for Plastic Waste Detection and Classification Using YOLOv3	178
<i>I Wayan Raka Ardana, Ida Bagus Irawan Purnama, I Made Sumerta Yasa</i>	
Autonomous Car Based on Teaching-and-Playback Control	183
<i>Noor Cholis Basjaruddin, Kiki Abdul Baki, Suhendar</i>	
Design and Development of Multiple Mobile Manipulator Robots using Gazebo-ROS	188
<i>P. Anggraeni, I. Rokhim, R. M. Salam</i>	
Comparison Gestures Recognition Using K-NN and Naïve Bayes.....	193
<i>Daniel S Pamungkas, Imanuel Simatupang, Sumantri K Risandriya</i>	
Segmentation of Finger Nails Image based on Image Processing methods.....	198
<i>Ima Kurniastuti, Tri Deviasari Wulan</i>	
MQTT Protocol Implementation for Monitoring of Environmental Based on IoT	203
<i>Afritha Amelia, Roslina, Nurul Fahmi, Heru Pranoto, Bakti Viyata Sundawa, Irwan Saputra Hutaauruk, Abdullah Arief</i>	

Author Index