2020 10th IEEE International Conference on Control System, Computing and Engineering (ICCSCE 2020)

Penang, Malaysia
21 – 22 August 2020

IEEE Catalog Number: CFP2014R-POD
ISBN: 978-1-7281-7244-6

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: CFP2014R-POD
ISBN (Print-On-Demand): 978-1-7281-7244-6
ISBN (Online): 978-1-7281-7243-9

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

Page

Organizing Committee iii

Technical Reviewers iv

Table of Contents v

Paper Title & Authors

JomDesignLab: Bringing Artwork Design Nearer 1
K. M. Liow, P. S. JosephNg and Y. F. Loh

IoT based Low Cost Distributed Air Quality Monitoring System for Big Data Collection 7
Chee Hoo Kok, Mohd Azrul Mohd Azlan and Soon Ee Ong

Effectiveness Smart Sensor Devices for Sustainable Irrigation in Agriculture 11
Siti Khairunnisa Sahit, Mohd Hudzari Razali and Samihah Mustaffha

An Improved Full-search Fractal Image Compression Method with Dynamic Search Approach 15
Abdul-Malik H. Y. Saad, Mohd Zaid Abdullah, Alduais Nayef A. M. and Antar Shaddad H. Abdul-Qawy

Observer-based Control for Biomass Regulation under Discrete Measurements 19
R. Ramjug-Ballgobin, K. Busawon, R. T. F. Ah King, H. C. S. Rughooputh

Route Selection in 5G-based Flying Ad-hoc Networks using Reinforcement Learning 23
Muhammad Fahad Khan and Kok-Lim Alvin Yau

Texture Descriptor Extraction for Iris Classification using Fuzzy Logic Local Binary Pattern 29
Ahmad N. Ali

CubeLink System – An on Board Data Handling (OBDH) for Space Exploration on Miniaturized Satellite 33
Nurul Hazirah Mohd-Isah, Nur Intan Raihana Ruhaiyem and Normah Abdul-Latip

Thermal Sensor Based Human Presence Detection for Smart Home Application 37
Fuh Kee Chuah and Soo Siang Teoh

A Multi Agent-Based Security Protocol for Securing Password Management Application 42
Nor Aimuni Md Rashid, Nurul Hidayah Ahmad Zukri, Zuhri Arafah Zulkifli, Norkhushaini Awang and Alya Geogiana Buja

Cost-Sensitive Extreme Gradient Boosting for Imbalanced Classification of Breast Cancer Diagnosis 46
Manop Phankokkruad

SCADA Design System with pH Effluent Monitoring on Sewage Treatment Plant in Mawar's College at UiTM Shah Alam using Tbox LT-12 RTU 52
Megat Syahir Megat Kamarulzaman and Mahanijah Md Kamal

Modelling of Lane Departure Warning System as Car-Driving Assistance using Android-Based System 57
Mohamad Syafiq Abdullah, Siti Noraini Sulaiman, Khairul Azman Ahmad and Iza Sazanita Isa

Simulation of Radio Tomographic Imaging for Measurement Rice Moisture Content 62
Mohammed Saeed Moqbel Abdullah, Mohd Hafiz Fazalul Rahiman, Ammar Zakaria, Latifah Munirah Kamarudin and Latifah Mohamed

Retinal Fluids Segmentation Using Volumetric Deep Neural Networks on Optical Coherence Tomography Scans 68
K. Alsaih, M. Z. Yusoff, T. B. Tang, I. Faye and F. M´eriaudeau

Pushdown Automata Versioning Framework for Web-Based Developmental Surveillance Systems 73
Yan Huan Ch'ng, Mohd Azam Osman and Hui Ying Jong

Fault Detection Method Using ANN for Power Transmission Line 79
Nor Adni Mat Leh, Fatihah Mohd Zain, Zuraida Muhammad, Shabinar Abd Hamid and Anis Diyana Rosli

Smart Agriculture Using Internet of Things with Raspberry Pi 85
Zuraida Muhammad, Muhammad Azri Asyraf Mohd Hafez, Nor Adni Mat Leh, Zakiah Mohd Yusoff and Shabinar Abd Hamid

Segmentation of Breast Microcalcification Using Hybrid Method of Canny Algorithm with Otsu Thresholding and 2D Wavelet Transform 91
Akmal Shafiq Badarul Azam, Aminah Abdul Malek, Aida Sharmaine Ramlee, Nur Diana Syahira Muhammad Suhaimi and Norlyda Mohamed

Interrelated Elements in Formulating an Efficient Requirements Prioritization Technique: Review 97
Fadhl Hujainah, Rohani Abu Bakar, Essam Alhroob, Basheer Al-haimi and Abdullah B. Nasser

IoT based Water Quality Monitoring System and Evaluation 102
Shabinar Abdul Hamid, Ahmad Mustaqim Abdu Rahim, Solahuddin Yusuf Fadhlullah, Samihah Abdullah, Zuraida Muhammad and Nor Adni Mat Leh

EEG Frontal Theta-Beta Ratio and Frontal Midline Theta for the Assessment of Social Anxiety Disorder 107
Abdulhakim Al-Ezzi, Nidal Kamel, Ibrahima Faye and Esther Gunaseli M. Ebenezer

Person Detection for Social Distancing and Safety Violation Alert based on Segmented ROI 113
Afiq Harith Ahamad, Norliza Zaini and Mohd Fuad Abdul Latip

Personal Energy Auditor based on Energy Consumption Rating using Normal Distribution for Energy Efficiency 119
Adib Zaki Zurkafli, Norliza Zaini and Mohd Fuad Abdul Latip

Data Collection Algorithms in Nodes with Multivariate Sensors within the WSN/IoT Environment 125
Jiwa Abdullah, Ansar Jamil and N. A. M. Alduais

People Detection System Using YOLOv3 Algorithm 131
Nurul Iman Hassan, Fadhlan Hafizhelmi Kamaru Zaman, Nooritawati Md. Tahir and Habibah Hashim

People Tracking System Using DeepSORT 137
Muhamad Izham Hadi Azhar, Fadhlan Hafizhelmi Kamaru Zaman, Nooritawati Md. Tahir and Habibah Hashim

An Illumination System based on Indirect Ophthalmoscopy for Retinal Imaging Photoplethysmography Assessment 142
Harnani Hassan, Fadzliana Saad and Muhamad Syakir Abd Manaf

Analysis of Features Extraction Performance to Differentiate of Dental Caries Types Using Gray Level Co-occurrence Matrix Algorithm 148
Yessi Jusman, Rhesezia Intan Tamarena, Sartika Puspita, Edwyn Saleh and Siti Nurul Aqmariah Mohd Kanafiah

Image Segmentation for Pavement Crack Detection System 153
Abdul Rahim Ahmad, Muhammad Khusairi Osman, Khairul Azman Ahmad, Muhammad Amiruddin Anuar and Nor Aizam Muhamed Yusof

Design of Spurs Gear for High Backdrivability Powered Knee Orthosis for FES-Assisted Knee Swing 158
A. A. Abd. Rahim, Z. Hussain, R. Boudville, J. Johari, A. I. Che-Ani and K. A. Ahmad

Classification of Starfruit Ripeness using Neural Network Technique 163
K. A. Ahmad, Noramalina Abdullah, Muhammad Khusairi Osman, Siti Noraini Sulaiman, Mohd Firdaus Abdullah and Zakaria Hussain

Optimization of ECG Peaks for Cardiac Abnormality Detection using Multilayer Perceptron 169
Syahrull Hi-Fi Syam Ahmad Jamil, Baharuddin Mustapha, Jailani Abdul Kadir, Nor Sham Hasan, Fakroul Ridzuan Hashim and Yulni Januar

Modelling and Simulation of Omnidirectional Mobile Robot with Line Follower and Obstacles Avoidance 174
Muhammad Farhan Fahim Adnan, Khairul Azman Ahmad, Rozan Boudville, Zakaria Hussain and Nurul Izza Husin

Author's Index 180