

2024 7th International Conference on Electronics, Communications, and Control Engineering (ICECC 2024)

**Kuala Lumpur, Malaysia
22-24 March 2024**



**IEEE Catalog Number: CFP24VY5-POD
ISBN: 979-8-3503-6754-6**

**Copyright © 200X 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:	CFPxxxx-POD
ISBN (Print-On-Demand):	979-8-xxxx-xxxx-x
ISBN (Online):	979-8-xxxx-xxxx-x
Library of Congress No.:	xxxxxxxxxxxx
ISSN:	xxxx-xxxx

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

2024 7th International Conference on Electronics, Communications, and Control Engineering (ICECC)

ICECC 2024

Table of Contents

Preface	viii
Organizing Committee	ix
Sponsors	xi

Visual Based Image Analysis and Processing Methods

Pioneering Driver Safety: Evaluating Weather Impacts with the Multi-Class-Weather Algorithm	1
Wei Sun (<i>Universiti Putra Malaysia, Malaysia</i>), Lili Nurliyana Abdullah (<i>Universiti Putra Malaysia, Malaysia</i>), Fatimah Binti Khalid (<i>Universiti Putra Malaysia, Malaysia</i>), and Puteri Suhaiza Binti Sulaiman (<i>Universiti Putra Malaysia, Malaysia</i>)	
Towards Diffusion Model Based Dataset Augmentation for Negative Obstacle Detection Systems.....	7
Julio Sebastián De La Trinidad-Rendón (<i>Tecnológico de Monterrey, México</i>), Jorge Antonio Reyes-Avendaño (<i>Tecnológico de Monterrey, México</i>), and Hugo Gustavo González-Hernández (<i>Tecnológico de Monterrey, México</i>)	
Study on Two-Dimensional Pan-tilt-Camera Platform Image Processing Based on OPENMV	12
Lihan Wang (<i>Soochow University, China</i>), Xingrong Zhong (<i>Soochow University, China</i>), Yuhao Hu (<i>Soochow University, China</i>), Yiwen Tang (<i>Soochow University, China</i>), Weiqing Wang (<i>Soochow University, China</i>), and Junjie Wang (<i>Soochow University, China</i>)	
Enhancing Human Action Recognition in Videos through Dense-Level Features Extraction and Optimized Long Short-Term Memory	19
Najmul Hassan (<i>The University of Aizu, Japan</i>), Abu Saleh Musa Miah (<i>The University of Aizu, Japan</i>), and Jungpil Shin (<i>The University of Aizu, Japan</i>)	

Classifying Trash Bin by Shape Scanning and Solid Waste Pressing	24
<i>Raul Vilcahuaman-Sanabria (Universidad Nacional del Callao, Peru), Roberto Solis-Farfán (Universidad Nacional del Callao, Peru), Daniel Ipínce-Antúnez (Universidad Nacional del Callao, Peru), Carlos Alfaro-Rodríguez (Universidad Nacional del Callao, Peru), Ricardo Vidal-Sánchez (Universidad Nacional del Callao, Peru), Nestor Gomero-Ostos (Universidad Nacional del Callao, Peru), Jesus Tabacchi-Murillo (Universidad Nacional del Callao, Peru), and Miguel Benites-Gutiérrez (Universidad Nacional de Trujillo, Peru)</i>	
Real-Time Object Tracking with YOLOv5 and Recurrent Network	28
<i>Mohammed Al Ameri (UAE University, United Arab Emirates) and Qurban Memon (UAE University, United Arab Emirates)</i>	

Modern Electronics and Information Systems

Multisim-Based Optimized Design of Butterworth Low-Pass Filters	33
<i>Yifan Zhou (Soochow University, China), Hu Sun (Jiangsu Newland Times Technology Co., Ltd, China), Jiale Xu (Soochow University, China), Xianyi Rui (Soochow University, China), Juanjuan Li (Soochow University, China), Yinrui Shi (Soochow University, China), and Yifan Qian (Soochow University, China)</i>	
A Hybrid Feature Selection Based Machine Learning Model for Detection of Motor Faults	41
<i>Rajvardhan Jigyasu (National Institute of Technology Delhi, India), Rahul Kumar (National Institute of Technology Delhi, India), and Sachin Singh (National Institute of Technology Delhi, India)</i>	
600V Insulated Gate Bipolar Transistor Design for Improving Breakdown Voltage in Trench Floating P-Well Charge Storage Layer Gate Bipolar Transistor	47
<i>Lee Chao Chan (Feng Chia University, Taiwan), Kao Yi Sheng (Feng Chia University, Taiwan), Yen Shih Keng (Feng Chia University, Taiwan), Xie Shang Rong (Feng Chia University, Taiwan), and Chien Feng Tso (Feng Chia University, Taiwan)</i>	
Design of SPWM-Based Single-Phase Voltage Stabilized Inverter	55
<i>Xianglu Guo (Soochow University, China), Juanjuan Li (Soochow University, China), and Lexiao Peng (Soochow University, China)</i>	
A High Performance Miniaturized 25 GHz Band Pass Filter Using Multilayer Split Path IPD Inductor for 5G/6G Radio Applications	60
<i>Machavaram Venkata Raghunadh (National Institute of Technology Warangal, India) and Bheema Rao Nistala (National Institute of Technology Warangal, India)</i>	

Modern Internet of Things Technology and Applications

Improving Service Quality: Innovations in Enriching the IoT Experience	66
<i>Deyana Prastika Putri (Telkom University, Indonesia), Muhammad Fakhrul Safitra (Telkom University, Indonesia), and Endang Chumaidiyah (Telkom University, Indonesia)</i>	

Health Gadget – An IoT Handheld Sugar Level Detector	72
<i>Ching Yee Yong (University of Technology Sarawak, Malaysia) and Jeffry Wen Kai Moi (University of Technology Sarawak, Malaysia)</i>	
Optimization of Water Resources through the Implementation of a Monitoring System Based on the Use of IOT Technology	77
<i>Daylen Lizana-Alcalde (Universidad Nacional del Callao, Peru), Noe Chavez-Temoche (Universidad Nacional del Callao, Peru), Carlos Canales-Escalante (Universidad Nacional del Callao, Peru), Raul Vilcahuaman-Sanabria (Universidad Nacional del Callao, Peru), Roberto Solis-Farfán (Universidad Nacional del Callao, Peru), Miguel Benites-Gutierrez (Universidad Nacional de Trujillo, Peru), Carlos Alfaro-Rodriguez (Universidad Nacional del Callao, Peru), and Daniel Ipince-Antunez (Universidad Nacional del Callao, Peru)</i>	
Design and Optimization of High-Performance On-Chip Fractal Inductors for Wireless Communication Systems	83
<i>Chiranjeevi Pudari (Kakatiya Institute of Technology and Science, Warangal, India), Bheemarao Nistala (National Institute of Technology, Warangal, India), and Sunil Kumar Tumma (Kakatiya Institute of Technology and Science, Warangal, India)</i>	

Development and Measurement of Intelligent Autonomous Systems

Enhancing Law Enforcement Security: Implementing MABIS Overlay with Virtual Tunnel Interface over IPsec Protocols for Robust Integration	87
<i>William P. Rey (Mapua University, Philippine)</i>	
Modelling of Human-Like Steering Behavior Under Emergency Collision Avoidance via Artificial Neural Network	94
<i>Sharifah Munawwarah (University of Tsukuba, Japan), Juan Sebastian Ruiz Medina (University of Tsukuba, Japan), Kenji Sato (Japan Automobile Research Institute, Japan), Genya Abe (Japan Automobile Research Institute, Japan), and Makoto Itoh (University of Tsukuba, Japan)</i>	
Low-Cost System Based on Artificial Neural Networks (ANN) for Air Pollution Prediction in Rural Areas	100
<i>Jacob Astocondor-Villar (Universidad Nacional del Callao, Perú), Raul Vilcahuaman-Sanabria (Universidad Nacional del Callao, Perú), Roberto Solis-Farfán (Universidad Nacional del Callao, Perú), Daniel Ipince-Antunez (Universidad Nacional del Callao, Perú), Carlos Canales-Escalante (Universidad Nacional del Callao, Perú), Nestor Gomero-Ostos (Universidad Nacional del Callao, Perú), Miguel Benites-Gutierrez (Universidad Nacional de Trujillo, Perú), and Jesus Tabacchi-Murillo (Universidad Nacional del Callao, Perú)</i>	

Author Index	107
---------------------------	------------