

2020 International Symposium on Computer, Consumer and Control (IS3C 2020)

**Taichung City, Taiwan
13 – 16 November 2020**



**IEEE Catalog Number: CFP2022S-POD
ISBN: 978-1-7281-9363-2**

**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:	CFP2022S-POD
ISBN (Print-On-Demand):	978-1-7281-9363-2
ISBN (Online):	978-1-7281-9362-5

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

2020 International Symposium on Computer, Consumer and Control (IS3C) **IS3C 2020**

Table of Contents

Message from the IS3C 2020 General Chair .xxiii.....
IS3C 2020 Organizing Committee .xxiv.....

Posters

The Management Control System for Plant Factory that uses the IoT Technology in
Combination with Augmented Reality Technology .1.....
*Tai-Hung Wang (Taipei City University of Science and Technology,
Taiwan), Xue-Ru Dai (Taipei City University of Science and Technology,
Taiwan), Pei-Yu Wang (Taipei City University of Science and
Technology, Taiwan), Yu-Xiang Hong (Taipei City University of Science
and Technology, Taiwan), Zi-Xiang Su (Taipei City University of
Science and Technology, Taiwan), Sheng-Wei Gao (Taipei City University
of Science and Technology, Taiwan), and Shi-Lun Wang (Taipei City
University of Science and Technology, Taiwan)*

Relation between Environment Color and Image Processing Performance at Design Development
Stage .5.....
*Eva Chang (National Sun Yat-sen University Kaohsiung, Taiwan), Rain
Chen (Southern Taiwan University of Science and Technology, Taiwan),
Chien-Yu Lin (National University of Tainan, Taiwan), and Pin-Yun
Hsiao (Southern Taiwan University of Science and Technology, Taiwan)*

A Realization of Transform Domain Distributed Video Coding on Raspberry Pi .9.....
*Yih-Chuan Lin (National Formosa University, Republic of China) and
Bang-Yao Deng (National Formosa University, Republic of China)*

A Gesture Controlled Music Playback System Using Convolutional Neural Network .13.....
*Hung-Kuang Chen (National Chin-Yi University of Technology, Republic
of China)*

Applying Internet of Things (IoT) Technology to Automatic Fire-Extinguishing System in
Machine Rooms .17.....
*Meng-Hui Wang (National Chin-Yi University of Technology, R.O.C.),
Shiue-Der Lu (National Chin-Yi University of Technology, R.O.C.),
Po-Yi Ho (National Chin-Yi University of Technology, R.O.C.), Shao-En
Wei (National Chin-Yi University of Technology, R.O.C.), and Cheng-Che
Hsieh (National Chin-Yi University of Technology, R.O.C.)*

A Novel Single-Stage High-Power-Factor LED Power Supply with Soft-Switching Feature for Streetlight Applications .19.....	
<i>Chun-An Cheng (I-Shou University, Taiwan), Hung-Liang Cheng (I-Shou University, Taiwan), Chien-Hsuan Chang (I-Shou University, Taiwan), En-Chih Chang (I-Shou University, Taiwan), Wei-Shiang Hung (I-Shou University, Taiwan), and Long-Fu Lan (I-Shou University, Taiwan)</i>	
Intuitive Criteria for Site Selection and Performance Evaluation of PV Systems in Southern Taiwan .22.....	
<i>Min-Chuan Lin (Kung-Shan University, Taiwan) and Zih-Syuan Lin (Kung-Shan University, Taiwan)</i>	
Research on the Application of Jigsaw Generative Adversarial Network to Face Generation .26.....	
<i>Zhen-Jie Yu (National Chin-Yi University of Technology, Taiwan) and Sheng-Chih Yang (National Chin-Yi University of Technology, Taiwan)</i>	
Chi-Square Detection for PVD Steganography .30.....	
<i>I-Hui Pan (National Defense University, Taiwan), Kung-Chin Liu (Plant 401, Production and Manufacturing Center, Ministry of National Defense, Taiwan), and Chiang-Lung Liu (Chung-Cheng Institute of Technology, National Defense University, Taiwan)</i>	
Design of AB Broker-Based Bio-Signal Analysis System to Secure Interoperability .34.....	
<i>Moon-Il Joo (Inje University, Korea), Tae-Woong Kim (Inje University, Korea), Youl-Ga Cho (Inje University, Korea), and Hee-Cheol Kim (Inje University, Korea)</i>	
Chatbot Application in Laboratory Equipment Management and e-Assistant .39.....	
<i>Shih-Hsiung Lin (National United University, Taiwan), Ray-Shine Run (National United University, Taiwan), and Jun-Yuan Yan (Freelancer, Taiwan)</i>	
Development and Application of Intelligent Agricultural Planting Technology - The Case of Tea .43.....	
<i>Mei-Yu Wu (National Taichung University of Science and Technology, R.O.C.) and Chih-Kun Ke (National Taichung University of Science and Technology, R.O.C.)</i>	
Readmission Prediction for Patients with Ischemic Stroke after Discharge .45.....	
<i>Chi-Hsun Lien (Tungs' Taichung MetroHarbor Hospital, Taiwan), Fu-Hsing Wu (Central Taiwan University of Science and Technology, Taiwan), Po-Chou Chan (Central Taiwan University of Science and Technology, Taiwan), Chien-Ming Tseng (Central Taiwan University of Science and Technology, Taiwan), Hsuan-Hung Lin (Central Taiwan University of Science and Technology, Taiwan), and Yung-Fu Chen (Central Taiwan University of Science and Technology, Taiwan)</i>	
Designing AI Models for Predicting Ischemic Stroke Using Administrative Healthcare Database .49.....	
<i>Wai-Fai Tung (Internal Medicine Tungs' Taichung MetroHarbor Hosp., Taiwan), Fu-Hsing Wu (Central Taiwan Univ. of Sci. & Tech., Taiwan), Po-Chou Chan (Central Taiwan Univ. of Sci. & Tech., Taiwan), Hsuan-Hung Lin (Central Taiwan Univ. of Sci. & Tech., Taiwan), Yung-Fu Chen (Central Taiwan Univ. of Sci. & Tech., Taiwan), and Chih-Sheng Lin (The Affil. BenQ Hosp. of Nanjing Med. Univ. Nanjing, China)</i>	

Smart Home Trash Can Based on Artificial Intelligence Technologies .53.....	53
<i>Yu-Huei Cheng (Chaoyang University of Technology, Taiwan), Hong-Kai Ruan (Chaoyang University of Technology, Taiwan), Jiun-Jian Liaw (Chaoyang University of Technology, Taiwan), and Che-Nan Kuo (CTBC Financial Management College, Taiwan)</i>	
Integration of IoT and Enhanced LSTM Framework for Water-Cooled Chiller COP Forecasting .57...	57
<i>Chao-Wei Yu (National Taipei University of Technology, Taiwan), June-Wei Chen (National Taipei University of Technology, Taiwan), and Yen-Lin Chen (National Taipei University of Technology, Taiwan)</i>	
Automatic Adjustment Method for Rotor Dynamic Balance System .61.....	61
<i>Yi-Hao Chung (National Taipei University of Technology, Taiwan), Chao-Wei Yu (National Taipei University of Technology, Taiwan), Bo-Rui Wen (National Taipei University of Technology, Taiwan), and Yen-Lin Chen (National Taipei University of Technology, Taiwan)</i>	
A Research on the Taipei MRT Passenger Traffic Prediction Model .65.....	65
<i>You-Shyang Chen (Hwa Hsia University of Technology, Taiwan), Su-Fen Chen (National Museum of Marine Science & Technology, Taiwan), Chien-Ku Lin (National Yunlin University of Science and Technology, Taiwan), and Shang-Hung Chen (Hwa Hsia University of Technology, Taiwan)</i>	
A Research on Image Captioning by Different Encoder Networks .68.....	68
<i>Jieh-Ren Chang (National Ilan University, Taiwan), Tsung-Ta Ling (National Ilan University, Taiwan), and Ting-Chun Li (National Ilan University, Taiwan)</i>	

Session Track 1_1 (LC601): Computer

Applied the Software of MATLAB to Calculate the Balanced Three-Phase Fault Using Impedance Matrix .72.....	72
<i>Ming-Jong Lin (Southern Taiwan University of Science and Technology, Taiwan (R.O.C.))</i>	
Fog Detection Application in Basin .76.....	76
<i>Jia-Xian Jian (National Chin-Yi University of Technology, Taiwan) and Chuin-Mu Wang (National Chin-Yi University of Technology, Taiwan)</i>	
AI-Based College Course Selection Recommendation System: Performance Prediction and Curriculum Suggestion .79.....	79
<i>Yu Hsuan Wu (National Central University, Taiwan) and Eric HsiaoKuang Wu (National Central University, Taiwan)</i>	
Equality NoC: A Novel NoC Topology for High Performance and Energy Efficiency .83.....	83
<i>Chun-Ho Cheng (National Cheng Kung University, Taiwan), Hong-Lin Wu (National Cheng Kung University, Taiwan), Chi-Hsiu Liang (National Cheng Kung University, Taiwan), Chao-Chin Li (National Cheng Kung University, Taiwan), Chun-Ming Chen (National Cheng Kung University, Taiwan), Po-Lin Huang (National Cheng Kung University, Taiwan), Sang-Lin Huang (National Cheng Kung University, Taiwan), and Chi-Chuan Hwang (National Cheng Kung University, Taiwan)</i>	

The Design and Implementation of an Integrated Building Environment for Android Systems .87....
Yi-Kuan Wu (*National Cheng Kung University, Taiwan*) and Jing Chen
(*National Cheng Kung University, Taiwan*)

Session Track 2 (LC602): Multimedia & Intelligent Computing

DDSnet: A Deep Document Segmentation with Hybrid Blocks Architecture Network .91.....
Jing-Ming Guo (*National Taiwan University of Science and Technology,
Taiwan*), Li-Ying Chang (*National Taiwan University of Science and
Technology, Taiwan*), and Hao-Hsuan Lee (*National Taiwan University of
Science and Technology, Taiwan*)

An Analysis for Motivating Sketching Practice with Augmented Reality in Da Vinci Eye .95.....
Shih-Chieh Liao (*Southern Taiwan University of Science and Technology,
Taiwan*) and Ming-Ju Kuo (*Southern Taiwan University of Science and
Technology, Taiwan*)

Early Intervention VR Sporting Games for Motor Skill Developmental Delay Children .98.....
Shiu-Hau Tsai (*National Central University*), Ying-Hao Hsieh (*National
Central University*), Ting-Hao Chao (*National Central University*),
Shih-Ching Yeh (*National Central University*), Eric Hsiao-Kuang Wu
(*National Central University*), and Hsiao-Wen Kao (*National Central
University*)

Vehicle Distance Estimation Method Based on Monocular Camera .102.....
Tzu-Yun Tseng (*National Taiwan University, Taiwan*) and Jian-Jiun Ding
(*National Taiwan University, Taiwan*)

Learning Based Age Estimation Using Joint Loss and Facial Landmarks .106.....
Min Chen Hsu (*National Taiwan University, Taiwan*) and Jian-Jiun Ding
(*National Taiwan University, Taiwan*)

Session Track 3 (LC603): Communication Application

A Deployment Management of High-Availability Microservices for Edge Computing .110.....
Hung-Ming Chen (*National Taichung University of Science and
Technology, Taiwan*), Shih-Ying Chen (*National Taichung University of
Science and Technology, Taiwan*), Zhong-Xiang Zheng (*National Taichung
University of Science and Technology, Taiwan*), Ti-Wei Huang (*National
Taichung University of Science and Technology, Taiwan*), and Cheng-Yu
Huang (*National Cheng Kung University, Taiwan*)

A New Type 3D Printing Microwave Resonant Cavity for Materials Moisture Sensing .114.....
Wei-Chen Cheng (*National Taipei University of Technology, Taiwan*),
Jwo-Shiun Sun (*National Taipei University of Technology, Taiwan*),
Guan-Yu Chen (*National Taipei University of Technology, Taiwan*),
Chi-Fan Liao (*FineTek Co., Ltd., Taiwan*), Kelvin Cheng (*FineTek Co.,
Ltd., Taiwan*), and Chu-Hsien Cheng (*Changhua County Huatan Junior High
School, Taiwan*)

Using SDN to Construct Network Slicing Like Platform for 5G Service .118.....
Hung-Chin Jang (*National Chengchi University, Taiwan*), Yu-Chiao Hsu
(*National Chengchi University, Taiwan*), and Han-Hsuan Lin (*National
Chengchi University, Taiwan*)

A Novel Turbo Scheme Combining PTS with Adaptive TR for PAPR Reduction in OFDM Systems
122

Yung-Ping Tu (National Formosa University, Taiwan), Feng-Hsu Wu (National Formosa University, Taiwan), and Yung-Fa Huang (Chaoyang University of Technology, Taiwan)

Robotic Arm Combined with the Visual Images in a Transparent Object Recognition .126.....

Chun-Kuan Chao (National Chin-Yi University of Technology, Taiwan), Shang-Ya Wu (National Chin-Yi University of Technology, Taiwan), Zhi-Tong Yan (National Chin-Yi University of Technology, Taiwan), Min-Long Tsai (National Chin-Yi University of Technology, Taiwan), Chia-Chi Hsu (National Chin-Yi University of Technology, Taiwan), Uilly Raihany (National Chin-Yi University of Technology, Taiwan), and Cheng-Yu Peng (National Chin-Yi University of Technology, Taiwan)

Sound Detection of CNC Milling Machine by Embedded System .130.....

Shu-Wei Kuo (National Taipei University of Technology, Taiwan), Uilly Raihany (National Chin-Yi University of Technology, Taiwan), and Cheng-Yu Peng (National Chin-Yi University of Technology, Taiwan)

Session Track 4-1 (LC604): Integrated Circuits

Analog-Digital Converter with Neural Network and DC-DC Converter for Underwater Solar Charging .134.....

Wen-Cheng Lai (National Yunlin University of Science and Technology, R.O.C.; National Taiwan University of Science and Technology, R.O.C.)

Continuous-Time Low-Pass Sigma-Delta ADC for Ambient Light Sensor Applications .138.....

Wen-Cheng Lai (National Yunlin University of Science and Technology, Taiwan)

The Effects of Different Electrodes and Surface Oxygen Plasma Treatment for Switching Behavior on tri-Layer Resistive Random Access Memory .142.....

Hong-Kai Wu (National Chin-Yi University of Technology, Taiwan), Hsin-Chiang You (National Chin-Yi University of Technology, Taiwan), and Cheng-Yen Wu (National Chin-Yi University of Technology, Taiwan)

A Hybrid Supply Modulator with Envelop Tracking Technique for RF Power Amplifier .146.....

Pao-Hua Liao (National Taipei University of Technology, Taiwan), Yi-Hsun Yang (National Taipei University of Technology, Taiwan), and Yuh-Shyan Hwang (National Taipei University of Technology, Taiwan)

A 10-bit 30MS/s Subranging SAR ADC with a Triple Reference Voltage Technique .150.....

Pao-Hua Liao (National Taipei University of Technology, Taiwan), Wei-Ing Wu (National Taipei University of Technology, Taiwan), and Yuh-Shyan Hwang (National Taipei University of Technology, Taiwan)

Session Track 5_1 (LC605): Consumer Electronics

Automatic Login System for Forehead Temperature Measurement .154.....

Sheng-Hsiung Lin (National Kaohsiung University of Science and Technology Kaohsiung, Taiwan) and Ching-Chun Lin (Southern Taiwan University of Science and Technology, Taiwan)

DALI-2 Intelligent Lighting Control System .158.....	<i>Man-Lin Wu (Ming Chi University of Technology, Taiwan), Che-Min Kung (Industrial Technology Research Institute, Taiwan), and Yi-Nan Lin (Ming Chi University of Technology, Taiwan)</i>
A Programmable Regulation System for Baking Western-Style Pastry .162.....	<i>Ting-Hsiang Wang (National Changhua University of Education, Taiwan) and Chi-Pan Hwang (National Changhua University of Education, Taiwan)</i>
The Study of Improving Makeup Tools and the Influence of Messy Dressing Room .166.....	<i>Shih Chieh Liao (Multimedia and Entertainment Science Southern Taiwan University of Science and Technology, Taiwan), Cheng Yan Shuai (Multimedia and Entertainment Science Southern Taiwan University of Science and Technology, Taiwan), and Ming Ju Ku (Multimedia and Entertainment Science Southern Taiwan University of Science and Technology, Taiwan)</i>

Session Track 1_2 (LC601): Computer

A Systematic Evaluation for Paint Messages and Their Processing Among C++/CLI Controls .170...	<i>Gao-Wei Chang (National Taiwan Normal University, ROC)</i>
Exploring Consistency of C++/CLI Programming Models with Migration Design from Hand-Made to Wizard-Readable Codes .174.....	<i>Gao-Wei Chang (National Taiwan Normal University, ROC)</i>
Application of Vehicle Detection Based on Deep Learning in Headlight Control .178.....	<i>Zi-Han Huang (National Chin-Yi University of Technology Taichung, Taiwan), Chuin-Mu Wang (National Chin-Yi University of Technology Taichung, Taiwan), Wun-Ciang Wu (National Chin-Yi University of Technology Taichung, Taiwan), and Wun-Syun Jhang (National Chin-Yi University of Technology Taichung, Taiwan)</i>
A Two-Stage Feature Extraction Gated Recurrent Unit for Wind Power Prediction .181.....	<i>Jung-Bin Li (Fu Jen Catholic University, Taiwan) and Yi-Zhu Huang (Fu Jen Catholic University, Taiwan)</i>

Session IS-03 (LC602): Advanced Computer Vision Technologies

A Posture Evaluation System for Fitness Videos Based on Recurrent Neural Network .185.....	<i>An-Lun Liu (National Cheng Kung University, Taiwan) and Wei-Ta Chu (National Cheng Kung University, Taiwan)</i>
End-to-End Deep Learning Model for Steering Angle Control of Autonomous Vehicles .189.....	<i>Abida Khanum Khanum (National Cheng Kung University, Taiwan), Chao-Yang Lee Lee (National Formosa University, Taiwan), and Chu-Sing Yang Yang (National Cheng Kung University, Taiwan)</i>
6DoF Tracking in Virtual Reality by Deep RNN Model .193.....	<i>Yun-Kai Chang (National Chung Cheng University, Country), Mai-Keh Chen (National Chung Cheng University, Country), Yun-Lun Li (National Chung Cheng University, Country), Hao-Ting Li (National Chung Cheng University, Country), and Chen-Kuo Chiang (National Chung Cheng University, Country)</i>

Automatic Leaf Counting Using Improved YOLOv3 .197.....	
	<i>Yi-Lin Tu (National Chung Cheng University Chiayi, Taiwan), Wei-Yang Lin (National Chung Cheng University Chiayi, Taiwan), and Yao-Cheng Lin (Academia Sinica, Taiwan)</i>

Session Track 8 (LC603): Digital Signal Processing

Graph Fourier Transform Centrality for Taipei Metro System .201.....	
	<i>Chien-Cheng Tseng (National Kaohsiung University of Science and Technology, Taiwan) and Su-Ling Lee (Chang-Jung Christian University, Taiwan)</i>
A Temperature Data Denoising Method Using Laplacian Matrix and Neumann Series .205.....	
	<i>Chien-Cheng Tseng (National Kaohsiung University of Science and Technology, Taiwan) and Su-Ling Lee (Chang-Jung Christian University, Taiwan)</i>
An Easy Wearable Gait Assessment System for Assessing Stroke Patients .209.....	
	<i>Mu-Hsun Tseng (National Cheng Kung University, Taiwan), Tain-Song Chen (National Cheng Kung University, Taiwan), and Ya-Ting Chang (National Cheng Kung University, Taiwan)</i>
Development of an Easy Equipment for Evaluating Sleep Quality .212.....	
	<i>Mu-Hsun Tseng (National Cheng Kung University, Taiwan), Tain-Song Chen (National Cheng Kung University, Taiwan), and Pik-Fei Yee (National Cheng Kung University, Taiwan)</i>
The Detection of Bearing Incipient Fault with Maximal Overlap Discrete Wavelet Packet Transform and Sparse Code Shrinkage Denoising .216.....	
	<i>D.-M. Yang (Kao-Yuan University, R.O.C)</i>

Session Track 4-2 (LC604): Integrated Circuits

2+2 Switched-Current Delta-Sigma Modulator with Digital Noise Cancellation Circuit .220.....	
	<i>Guo-Ming Sung (National Taipei University of Technology, Taiwan), Chun-Ting Lee (National Taipei University of Technology, Taiwan), and Sian-Wei Chao (National Taipei University of Technology, Taiwan)</i>
10-Bit Successive Approximation Register Analog-to-Digital Converter for BLDC Motor Drive .224	
	<i>Sung Guo-Ming (National Taipei University of Technology, Taiwan), Wu Po-En (National Taipei University of Technology, Taiwan), and Xu Jun-Min (National Taipei University of Technology, Taiwan)</i>
Effects of Direct Optical Ablation and Sequent Thermal Ablation on an Ultrafast Pulsed Laser Microprocessing .228.....	
	<i>Wen-Chieh Wu (Hwa Hsia University of Technology, Taiwan) and Ching-Yen Ho (Electrical Engineering Chizhou University; Electrical Engineering Guangdong University of Petrochemical Technology; Hwa Hsia University of Technology, China)</i>
An 8-bit 1.5GS/s Subranging ADC with Level-Shift Operation and Calibration Techniques .232.....	
	<i>Chung-Ming Yang (National Cheng Kung University, Taiwan) and Tai-Haur Kuo (National Cheng Kung University, Taiwan)</i>

Session Track 5_2 (LC605): Consumer Electronics

- Design and Implementation of a Modular AI-Enabled Shovel Weeder .236.....
Bo-Xuan Xie (National Pingtung University of Science and Technology, Taiwan), Sheng-Cheng Chung (National Pingtung University of Science and Technology, Taiwan), and Chung-Liang Chang (National Pingtung University of Science and Technology, Taiwan)
- A Single-Switch LED Tube Light Driver with Coupled-Inductor and Power-Factor-Correction for Indoor Lighting Applications .240.....
Chun-An Cheng (I-Shou University, Taiwan), Hung-Liang Cheng (I-Shou University, Taiwan), En-Chih Chang (I-Shou University, Taiwan), Chien-Hsuan Chang (I-Shou University, Taiwan), Su-Wun Lai (I-Shou University, Taiwan), and Pin-Hao Huang (I-Shou University, Taiwan)
- Efficiency Analysis of Light Emitting Diodes Based on Material Properties and Structures .243.....
Wen-Chieh Wu (Hwa Hsia University of Technology, Taiwan) and Ching-Yen Ho (Chizhou University, Guangdong University of Petrochemical Technology, Hwa Hsia University of Technology, China)
- Flowmeter Selection for Hygienic Fluid Handling Applications Using Trade-off Analysis .247.....
Fuhua Jen (Minghsin University of Science and Technology, Taiwan) and Ryan Collin De Leon (Minghsin University of Science and Technology, Taiwan)
- Applying ant Algorithm to the Automatic Control System of Freight Load .251.....
Te-Kwei Wang (Ming Chi University of Technology, Taiwan), Yu-Hsun Lin (Ming Chi University of Technology, Taiwan), Chih-Hao Chuan (Ming Chi University of Technology, Taiwan), and Jia-Ming Lin (Ming Chi University of Technology, Taiwan)
- Applying Smart Cloud in the Hospital Card Swiping and Scheduling System .255.....
Chih-Ming Lin (Ming Chi University of Technology, Taiwan), Te-Kwei Wang (Ming Chi University of Technology, Taiwan), Yu Hsun Lin (Ming Chi University of Technology, Taiwan), Jin Rong Wu (Ming Chi University of Technology, Taiwan), and Chia Ho Chao (Ming Chi University of Technology, Taiwan)

Session Track 6_1 (LC601): Renewable Energy

- Applying Hybrid Passive Current-Sharing Components to Non-Isolated LED Driver .259.....
Jiang Wen-Zhuang (Chicony Power Technology Co., Ltd., Taiwan), K. I. Hwu (National Taipei University of Technology, Taiwan), and H. H. Chen (National Taipei University of Technology, Taiwan)
- Improvement of Light Load Efficiency for Ultrahigh Step-Down Converter .263.....
Y. T. Yau (National Chin-Yi University of Technology, Taiwan), C. W. Wang (National Chin-Yi University of Technology, Taiwan), and K. I. Hwu (National Taipei University of Technology, Taipei, Taiwan)
- Smart Active Battery Charger for Prototypal Electric Scooter .268.....
Yu-Kun Tai (National Taipei University of Technology, Taiwan), Yuan-Hua Lin (National Taipei University of Technology, Taiwan), and K. I. Hwu (National Taipei University of Technology, Taiwan)

Overview of Frequency Control Technologies for Wind Power Systems .272.....	
	<i>Chung-Han Lin (National Chung-Cheng University, Taiwan) and Yuan-Kang Wu (National Chung-Cheng University, Taiwan)</i>
Overview of Reactive Power and Voltage Control of Offshore Wind Farms .276.....	
	<i>Deng-Yue Gau (National Chung-Cheng University, Taiwan) and Yuan-Kang Wu (National Chung-Cheng University, Taiwan)</i>
Power-Sharing in a Meshed HVDC Network and Its Application for Frequency Support .280.....	
	<i>Vo Thanh Kien Nguyen (National Chung-Cheng University, Taiwan), Yuan-Kang Wu (National Chung-Cheng University, Taiwan), and Quoc Dung Phan (Ho Chi Minh city University of Technology, Vietnam)</i>

Session Track 7 (LC602): Systems and Control

Comparison of Deep Reinforcement Learning Algorithms in a Robot Manipulator Control Application .284.....	
	<i>Chang Chu (Doshisha University, Japan), Kazuhiko Takahashi (Doshisha University, Japan), and Masafumi Hashimoto (Doshisha University, Japan)</i>

Session Track 2 + IS-03 (LC603): Multimedia & Intelligent Computing / Advanced Computer Vision Technologies

Dynamic Motion Vector Searching Algorithm Using Window Adjustment, Global Motion Information, and Direction Priors .288.....	
	<i>Chun-Hung Lin (National Taiwan University, Taiwan), Jian-Jiun Ding (National Taiwan University, Taiwan), and Yi-Shang Lu (National Taiwan University, Taiwan)</i>
Advanced Superpixel-Based Features and Machine Learning Based Saliency Detection .292.....	
	<i>Heng-Sheng Lin (National Taiwan University, Taiwan), Jian-Jiun Ding (National Taiwan University, Taiwan), and Jin-Yu Huang (National Taiwan University, Taiwan)</i>
Automated Optical Inspection System for O-Ring Based on Photometric Stereo and Machine Vision .296.....	
	<i>Fu-Sheng Yang (National Taipei University of Technology, Taiwan) and Chao-Ching Ho (National Taipei University of Technology, Taiwan)</i>
Diseases Classification Utilizing Tooth X-ray Images Based on Convolutional Neural Network.300	
	<i>Lawrence Y. Deng (St. John's University, Taiwan), See Sang Ho (St. John's University, Taiwan), and Xiang Yann Lim (St. John's University, Taiwan)</i>

Attention-LSTM Fused U-Net Architecture for Organ Segmentation in CT Images .304.....
Pin-Hsiu Chen (National Chung Cheng University, Taiwan), Cheng-Hsien Huang (National Chung Cheng University, Taiwan), Shih-Kai Hung (Dalin Tzu Chi Hospital, Buddhist Tzu Chi Medical Foundation, Taiwan), Liang-Cheng Chen (Dalin Tzu Chi Hospital, Buddhist Tzu Chi Medical Foundation, Taiwan), Hui-Ling Hsieh (Dalin Tzu Chi Hospital, Buddhist Tzu Chi Medical Foundation, Taiwan), Wen-Yen Chiou (Dalin Tzu Chi Hospital, Buddhist Tzu Chi Medical Foundation, Taiwan), Moon-Sing Lee (Dalin Tzu Chi Hospital, Buddhist Tzu Chi Medical Foundation, Taiwan), Hon-Yi Lin (Dalin Tzu Chi Hospital, Buddhist Tzu Chi Medical Foundation, Taiwan), and Wei-Min Liu (National Chung Cheng University, Taiwan)

Session IS-01 + Track3 (LC604): Soft Computing and Its Applications / Communication Application

A Big Data-Based Target Cost Management System .308.....
Yin-Chen Lin (National Chin-Yi University of Technology, Taiwan), Jyun-Jie Wang (National Chin-Yi University of Technology, Taiwan), Sheng-Chih Yang (National Chin-Yi University of Technology, Taiwan), and Chi-Yuan Lin (National Chin-Yi University of Technology, Taiwan)

Cargo Delivery Itinerary Management and Inspection System .312.....
Wei-Ting Kuo (National Chin-Yi University of Technology, Taiwan), Sheng-Chih Yang (National Chin-Yi University of Technology, Taiwan), and Chi-Yuan Lin (National Chin-Yi University of Technology, Taiwan)

Using Deep Learning Improve the Aerial Engine Nondestructive Radiographic Tests .315.....
Zhi-Hao Chen (National Cheng Kung University, Tainan) and Jyh-Ching Juang (National Cheng Kung University, Tainan)

Beyond the Performance of 3D-Torus: Equality Topology with Low Radix .319.....
Hong-Lin Wu (National Cheng Kung University, Taiwan), Chun-Ho Cheng (National Cheng Kung University, Taiwan), Chi-Hsiu Liang (National Cheng Kung University, Taiwan), Chao-Chin Li (National Cheng Kung University, Taiwan), Chun-Ming Chen (National Cheng Kung University, Taiwan), Po-Lin Huang (National Cheng Kung University, Taiwan), Sang-Lin Huang (National Cheng Kung University, Taiwan), and Chi-Chuan Hwang (National Cheng Kung University, Taiwan)

The Development of LoRa Image Transmission Based on Time Division Multiplexing .323.....
Wei Ching-Chuan (Chaoyang University of Technology, Taiwan), Huang Jia-Kai (Chaoyang University of Technology, Taiwan), Chang Chia-Chi (Chaoyang University of Technology, Taiwan), and Chang Kuan-Chun (Chaoyang University of Technology, Taiwan)

Session IS-04 (LC605): Power Quality and Energy System

Power Quality Disturbances Classification Based on Wavelet Compression and Deep Convolutional Neural Network .327.....
Sunneng Sandino Berutu (Asia University, Taiwan) and Yeong-Chin Chen (Asia University, Taiwan)

Using Multi-Mode PV-STATCOM System for Steel Plant Power System Voltage Fluctuation Mitigation .331.....	331
<i>Yu-Jen Liu (National Chung Cheng University, Taiwan), Yi-Fon Pai (National Chung Cheng University, Taiwan), Cheng-Chieh Lee (National Chung Cheng University, Taiwan), Yih-Der Lee (Institute of Nuclear Energy Research, Taiwan), and Jheng-Lung Jiang (Institute of Nuclear Energy Research, Taiwan)</i>	
Energy Management between Power Generation, Storage, and Consumption for Building Microgrid .335.....	335
<i>Cheng-I Chen (National Central University, Taiwan), Yeong-Chin Chen (Asia University, Taiwan), and Chung-Hsien Chen (Metal Industries Research, Taiwan)</i>	
One-Hour Ahead Solar Irradiance/Power Forecasting Using Radial Basis Function Neural Network with Fuzzy Activation Function .339.....	339
<i>Ying-Yi Hong (Chung Yuan Christian University, Taiwan), Yu-Hsuan Chan (Chung Yuan Christian University, Taiwan), and Ching-Wei Yu (Chung Yuan Christian University, Taiwan)</i>	

Session Track 6_2 (LC601): Renewable Energy

Short-Term Photovoltaic Power Forecasting Based on Improved Firefly Algorithm to Optimize Support Vector Machine .344.....	344
<i>Nsengimana Cyprien (Hebei University of Technology, China), XinTong Han (Hebei University of Technology, China), HaiYu Wang (Hebei University of Technology, China), Xiu Jun Shen (Hebei University of Technology, China), and Lingling Li (Hebei University of Technology, China)</i>	
Estimation of Power System Inertia Using Traditional Swing Equation, Polynomial Approximation and RV Methods .347.....	347
<i>Yuan-Kang Wu (National Chung-Cheng University, Taiwan), Khoa Le (University of Technology Ho Chi Minh City, Vietnam), Thien-An Nguyen (University of Technology Ho Chi Minh City, Vietnam), and Quoc-Dung Phan (University of Technology Ho Chi Minh City, Vietnam)</i>	
An Efficiency-Optimized Totem-Pole Bridgeless Power Factor Correction Regulator using GaN HEMTs .351.....	351
<i>Nguyen-Nghia Do (National Taiwan University of Science and Technology, Taiwan), Bing-Siang Huang (National Taiwan University of Science and Technology, Taiwan), Tan-Tung Nguyen (National Taiwan University of Science and Technology, Taiwan), Jian-Hong Wu (National Taiwan University of Science and Technology, Taiwan), Yu-Chen Liu (National ILAN University, Taiwan), and Huang-Jen Chiu (National Taiwan University of Science and Technology, Taiwan)</i>	
Wind Turbulence Characteristics Under Typhoon Conditions .356.....	356
<i>Michel Paurus (National Cheng Kung University, Taiwan), Jiun-Jih Miao (National Cheng Kung University, Taiwan), and Yng-Ru Chen (National Cheng Kung University, Taiwan)</i>	

Session IS-05 (LC602): IoT Sensing and Artificial Intelligence

- Particulate Matter 2.5 Machine Learning Estimation System Based on Internet of Things Architecture .361.....
Shun-Yuan Wang (National Taipei University of Technology, Taiwan), Wen-Bin Lin (National Taipei University of Technology, Taiwan), and Yu-Chieh Shu (National Taipei University of Technology, Taiwan)
- The Preliminary Design of Water Quality Monitor System for the Ecological Pond Based on LoRaWAN .365.....
Chang-Wei Hsieh (Asia University Taichung, Taiwan), Yun Ju Tsai (Asia University, Taiwan), Corine Stefanie (Airlangga University, Indonesia), Charles C.N. Wang (Center for Artificial Intelligence and Precision Medicine Research, Asia University, Taiwan), and Wen-Thong Scott Chang (Asia University, Taiwan)
- A Novel Simple Light-Weight Neural Network for Road Segmentation .368.....
Peng-Wei Lin (National Taipei University of Technology, Republic of China) and Chih-Ming Hsu (National Taipei University of Technology, Republic of China)

Session IS-06+Track 1 (LC603): Informatic System Design and Implementation / Computer

- Development of a Cloud Tourism Supported Platform with Friendly Interfaces Based on Linked Open Data and Big Data Analysis Techniques .372.....
Yang Sheng-Yuan (Lunghwa University of Science and Technology, R.O.C.) and Chen Kune-Yao (St. John's University, R.O.C.)
- A Deep Learning Co-Training Framework for e-Book Classification .376.....
Tsui-Ping Chang (National Taichung University of Science and Technology, Taiwan), Hung-Ming Chen (National Taichung University of Science and Technology, Taiwan), and Jian-Qun Chen (National Taichung University of Science and Technology, Taiwan)
- A Traceable Smart Grid Trading System Under Blockchain .380.....
Ming-Te Chen (Computer Science and Information Engineering, National Chin-Yi University Technology, Taiwan), Chu Xuan Liang (Computer Science and Information Engineering, National Chin-Yi University Technology, Taiwan), and Chia Chu Chen (Computer Science and Information Engineering, National Chin-Yi University Technology, Taiwan)

Session IS-07 + Track 5 (LC604): Innovative Applications of Technologies and Data Analysis for Internet of Thing / Consumer Electronics

- The Transformation of Relational Database to Wide Column Store Database .384.....
Jeang-Kuo Chen (Chaoyang University of Technology, Taiwan) and Wei-Zhe Li (Chaoyang University of Technology, Taiwan)

The Rehabilitation and Assessment in Virtual Reality Game for the Patient with Cognitive Impairment .387.....
Liang-Yu Chen (National Central University, Taiwan), Li-Yen Chang (National Central University, Taiwan), You-Chen Deng (National Central University, Taiwan), and Bing-Che Hsieh (National Central University, Taiwan)

Pet cat Behavior Recognition Based on YOLO Model .391.....
Hsiu-Te Hung (Chaoyang University Of Technology, Taiwan) and Rung-Ching Chen (Chaoyang University Of Technology, Taiwan)

Optimal Model of Obstacle Avoidance of Two-Wheeled Robots .395.....
Jia-Hong Jhou (I-Shou University, Taiwan), Chih-Liang Chen (I-Shou University, Taiwan), and Chi-Wei Sun (I-Shou University, Taiwan)

Session IS-08 (LC605): Artificial Intelligence and Internet of Things Technologies and Applications

Convolutional Neural Networks Approach for Music Genre Classification .399.....
Yu-Huei Cheng (Chaoyang University of Technology, Taiwan), Pang-Ching Chang (Chaoyang University of Technology, Taiwan), and Che-Nan Kuo (CTBC Financial Management College, Taiwan)

An Artificial Intelligence-Based Proactive Blind Spot Warning System for Motorcycles .404.....
Ing-Chau Chang (National Changhua University of Education, Taiwan (R.O.C.)), Wei-Rong Chen (National Changhua University of Education, Taiwan (R.O.C.)), Xun-Mei Kuo (National Changhua University of Education, Taiwan (R.O.C.)), Ya-Jing Song (National Changhua University of Education, Taiwan (R.O.C.)), Ping-Hao Liao (National Changhua University of Education, Taiwan (R.O.C.)), and Chunghui Kuo (Eastman Kodak Company, USA)

The Performance Evaluation to a Smart Robots Embedded with Machine Learning Schemes .408...
Joy Iong-Zong Chen (Da-Yeh University (DYU), Taiwan (R.O.C.)), Pisith Hengjinda (Da-Yeh University (DYU), Taiwan (R.O.C.); Phetchaburi Rajabhat University (PBRU), Thailand), and Shu Rui Hsu (Da-Yeh University (DYU), Taiwan (R.O.C.))

Session IS-09 (LC601): Forecasting Technique for Renewable Power Generation

Short-Term Wind Power Forecasting by Advanced Machine Learning Models .412.....
Yun-Lun Li (National Chung Cheng University, Taiwan), Zheng-An Zhu (National Chung Cheng University, Taiwan), Yun-Kai Chang (National Chung Cheng University, Taiwan), and Chen-Kuo Chiang (National Chung Cheng University, Taiwan)

A Comparative Analysis of XGBoost and Temporal Convolutional Network Models for Wind Power Forecasting .416.....
Quoc-Thang Phan (National Chung Cheng University, Taiwan), Yuan-Kang Wu (National Chung Cheng University, Taiwan), and Quoc-Dung Phan (University of Technology, Vietnam)

Analyzing Solar Resource Variability: A Case Study in Taiwan .420.....	
	<i>Thi Bich Phuong Nguyen (National Chung-Cheng University, Taiwan), Yuan-Kang Wu (National Chung-Cheng University, Taiwan), Manh-Hai Pham (Electric Power University, Vietnam), and Ba Long Dong (National Chung-Cheng University, Taiwan)</i>
A Review of Methods for Estimating the Power Generation of Invisible Solar Sites .424.....	
	<i>Yi-Hui Lai (National Chung-Cheng University , Taiwan) and Yuan-Kang Wu (National Chung-Cheng University , Taiwan)</i>
Probabilistic Wind Power Forecasts Considering Different NWP Models .428.....	
	<i>Sheng-Hong Wu (National Chung-Cheng University , Taiwan) and Yuan-Kang Wu (National Chung-Cheng University , Taiwan)</i>
Short-Term Solar Power Forecasts Considering Various Weather Variables .432.....	
	<i>You-Jing Zhong (National Chung-Cheng University , Taiwan) and Yuan-kang Wu (National Chung-Cheng University , Taiwan)</i>

Session Track 7 + IS-05 (LC602): Systems and Control / IoT Sensing and Artificial Intelligence

Heterogeneous Platooning Vehicle with Robust Sensor Fault Detection and Estimation .436.....	
	<i>Muhammad Rony Hidayatullah (National Cheng Kung University, Taiwan), Jyh-Ching Juang (National Cheng Kung University, Taiwan), Zhi-Hao Fang (National Cheng Kung University, Taiwan), and Wei-Hsuan Chang (Automotive Research and Testing Center, Taiwan)</i>
Water Quality Monitoring Using Physio Chemical Sensors .440.....	
	<i>Wen-Tsai Sung (National Chin-Yi University of Technology) and Fathria Nurul Fadillah (National Chin-Yi University of Technology)</i>

Session IS-10 (LC603): Intelligent Systems and Control

Quick Implementation of Pule Wise Modulation(PWM), Pulse Frequency Modulation(PFM) and Mixed PWM/PFM on FPGA Chip .444.....	
	<i>Cheng-Shion Shieh (Far East University, Taiwan)</i>
A Biological Automation Incubator System Based on a Single Chip .448.....	
	<i>Yi-Yu Lu (Far East University Tainan City, Taiwan), Hau-Chen Yen (Far East University Tainan City, Taiwan), and Kuang-Kuo Lin (Far East University Tainan City, Taiwan)</i>
RoboRIO-Based Crop Harvesting Robot .451.....	
	<i>Kuo-Hsien Hsia (National Yunlin University of Science and Technology, Taiwan), Bo-Jun Yang (National Yunlin University of Science and Technology, Taiwan), Ze-Yu Huang (National Yunlin University of Science and Technology, Taiwan), and Jia-Ming Hsiao (National Yunlin University of Science and Technology, Taiwan)</i>

Session IS-11 + IS-12 (LC604): Artificial Intelligence for Engineering Business Management / Advanced Artificial Intelligence Technologies for Smart Manufacturing

- Market Profile with Convolutional Neural Networks: Learning the Structure of Price Activities 454.....
Chern-Bin Ju (National Chiao Tung University, Taiwan), Min-Chih Hung (National Chiao Tung University, Taiwan), and An-Pin Chen (National Chiao Tung University, Taiwan)
- An Intelligent Disease Query System Based on Rasa NLU 458.....
Hsiao-Ting Tseng (n/a), Chen-Chiung Hsieh (n/a), and Yi-Wei Lin (n/a)
- Based on Machine Learning for Personalized Skin Care Products Recommendation Engine 460.....
Hsiao-Hui Li (Tainan University of Technology, Taiwan), Yuan-Hsun Liao (Tunghai University, Taiwan), Yen-Nun Huang (Academia Sinica, Taiwan), and Po-Jen Cheng (National Chung Cheng University, Taiwan)
- Exploring Misjudgments in IoT Analytics 463.....
Hao-Ting Pai (National Yunlin University of Science and Technology, Taiwan), Szu-Hong Wang (National Yunlin University of Science and Technology, Taiwan), and Jian-Xing Wu (National Chin-Yi University of Technology, Taiwan)

Session IS-12 (LC605): Advanced Artificial Intelligence Technologies for Smart Manufacturing

- Torque Controlled Mini-Screwdriver Station with A SCARA Robot and A Machine-Vision Guidance 465.....
Albert Wen-Jeng Hsue (National Kaohsiung University of Science and Technology, Taiwan) and Chih-Fan Tsai (National Kaohsiung University of Science and Technology, Taiwan)
- Performance Demands Based Servo Motor Speed Control: A Genetic Algorithm Proportional-Integral Control Parameters Design 469.....
Chao-Chung Peng (National Cheng Kung University, Taiwan) and Chia-Ling Lee (National Cheng Kung University, Taiwan)
- Object Recognition and Classification of 2D-SLAM using Machine Learning and Deep Learning Techniques 473.....
Yu-Fu Lin (National Chung Hsing University, Taiwan), Lee-Jang Yang (National Chung-Shan Institute of Science & Technology, Taiwan), Chun-Yen Yu (National Cheng Kung University, Taiwan), Chao-Chung Peng (National Cheng Kung University, Taiwan), and Der-Chen Huang (National Chung Hsing University, Taiwan)
- Inverted Pendulum System with Taguchi Proportional-Derivative Control Design as Optimized Parameters Implementing on Embedded System 477.....
Bagus Alit Prasetyo (National Chin-Yi University of Technology, Taiwan), Bo-Lin Jian (National Chin-Yi University of Technology, Taiwan), and Her-Terng Yau (National Chung Cheng University, Taiwan)

Remote Video Presentations

- Development of Mobile Application for Automatic Identification of Biotic Diseases in *Oryza Sativa* Using Image Processing Techniques 480.....
Ronald M. Pascual (De La Salle University, Philippines), Sarah Grace Canonigo (Analog Devices Inc., Philippines), Lhean Ritchie Cruz (Denso Techno Philippines), Madel Roque (One Commerce Int'l Corporation, Philippines), and Jason Nobleza (MD Tambungui Specialists Inc., Philippines)
- Secrecy Outage Performance and Deep Learning Evaluation of Multihop Energy Harvesting IoT Networks over Nakagami-m Fading Channels 484.....
Toan-Van Nguyen (Hongik University, Republic of Korea), Thong-Nhat Tran (Hongik University, Republic of Korea), Kyusung Shim (Hongik University, Republic of Korea), Thien Huynh-The (ICT Convergence Research Center, Kumoh National Institute of Technology, Republic of Korea), and Beongku An (Hongik University, Republic of Korea)
- Vehicle Trajectory Prediction Based on Social Generative Adversarial Network for Self-Driving Car Applications 489.....
Li-Wei Kang (National Taiwan Normal University, Taiwan), Chih-Chung Hsu (National Pingtung University of Science and Technology, Taiwan), I-Shan Wang (National Yunlin University of Science and Technology, Taiwan), Ting-Lei Liu (National Yunlin University of Science and Technology, Taiwan), Shih-Yu Chen (National Yunlin University of Science and Technology, Taiwan), and Chuan-Yu Chang (National Yunlin University of Science and Technology, Taiwan)
- Screw Defect Detection System Based on AI Image Recognition Technology 493.....
Kuo HangHong (National Chin-Yi University of Technology, Taiwan), Xu JuinMing (Southern Taiwan University of Science and Technology, Taiwan), Yu ChaoTang (Southern Taiwan University of Science and Technology, Taiwan), and Yan JunJuh (National Chin-Yi University of Technology, Taiwan)
- Deep-Learning Based Automated Segmentation of Diabetic Retinopathy Symptoms 497.....
Hung Yeh (National United University Miaoli, Taiwan), Cheng-Jhong Lin (National United University Miaoli, Taiwan), Chih-Chung Hsu (National Pingtung University of Science & Technology Pingtung, Taiwan), and Chia-Yen Lee (National United University Miaoli, Taiwan)
- Genetic and Fuzzy Fusion Algorithm for Coal-Feeding Optimal Control of Coal-Fired Power Plant 500.....
Danyang Wang (Xi'an University of Science and Technology, China), Mei Wang (Xi'an University of Science and Technology, China), and Yuancheng Li (Xi'an University of Science and Technology, China)
- Adaptive Convolution Neural Network Algorithm of Whole Process Learning Rate for Mine Fire Detection Method 504.....
YunChao Liu (Xi'an University of science and technology, Taiwan), Chi Liu (Beijing University of Technology Beijing, China), and Mei Wang (Xi'an University of Science and Technology, China)

Classification of Driving Fatigue Based on EEG Signals .508.....	
	<i>Xuebin Qin (Xi'an University of Science and Technology, China), Peijiao Yang (Xi'an University of Science and Technology, China), Yutong Shen (Xi'an University of Science and Technology, China), Mingqiao Li (Xi'an University of Science and Technology, China), Jiachen Hu (Xi'an University of Science and Technology, China), and Janhong Yun (Shaanxi Province Institute of Water Resources and Electric Power Investigation and Design, China)</i>
Scene Recognition Model in Underground Mines Based on CNN-LSTM and Spatial-Temporal Attention Mechanism .513.....	
	<i>Tianwei Zheng (Xi'an University of Science and Technology, China), Chi Liu (Beijing Institute of Technology, China), Beizhan Liu (SHCCIG Yubei Coal Industry Co, Ltd., China), Mei Wang (Xi'an University of Science and Technology, China), Yuancheng Li (Xi'an University of Science and Technology, China), Pai Wang (Xi'an University of Science and Technology, China), Xuebin Qin (Xi'an University of Science and Technology, China), and Yuan Guo (Xi'an University of Science and Technology, China)</i>
An Energy-Balanced Multi-hop Transmission Routing Algorithm for Linear Wireless Sensor Networks .517.....	
	<i>Pai Wang (Xi'an University of Science and Technology, China), Zhuo Liu (Xi'an University of Science and Technology, China), Mei Wang (Xi'an University of Science and Technology, China), Xuebin Qin (Xi'an University of Science and Technology, China), and Jiaqing Li (Xi'an University of Science and Technology, China)</i>
NAO Robot Limb Control Method Based on Motor Imagery EEG .521.....	
	<i>Yuan Guo (Xi'an University of Science and Technology, China), Mei Wang (Xi'an University of Science and Technology, China), Tianwei Zheng (Xi'an University of Science and Technology, China), Yuancheng Li (Xi'an University of Science and Technology, China), Pai Wang (Xi'an University of Science and Technology, China), and Xuebin Qin (Xi'an University of Science and Technology, China)</i>
Awareness, Knowledge, and Attitude Towards Artificial Intelligence: Perspectives of Vietnamese Information Technology Students .525.....	
	<i>Pei-Ju Chao (Duy Tan University, Taiwan), Tsu-Hsuan Hsu (Duy Tan University, Taiwan), Tsai-Pei Liu (National Taichung University of Science and Technology), and Yu-Huei Cheng (Chaoyang University of Technology, Taiwan)</i>
Interactive Labeling System for Lung Nodules with CT Images .529.....	
	<i>Sota Chatani (Kyoto Institute of Technology, Japan), Yanhe Ma (Tianjin Chest Hospital, China), Hong Zhang (Tianjin Chest Hospital, China), Ying Chen (Tiangong Univeristy, China), and Weiwei Du (Kyoto Institute of Technology, Japan)</i>
Multiple Linear Regression Based on Stream Homomorphic Encryption Computing .533.....	
	<i>Yi-zhuo Zhang (Fuzhou University, China), Yiwei Liu (Fuzhou University, China), Chan-Liang Chung (Fuzhou University, China), Chi-Hua Chen (Fuzhou University, China), and Feng-Jang Hwang (University of Technology Sydney, Australia)</i>

Biological Sound Sensor Robust to Air Conduction Noise .537.....	537
<i>Naoto Murakami (Yamaguchi University, Japan), Kaede Torii (Yamaguchi University, Japan), and Shota Nakashima (Yamaguchi University, Japan)</i>	
A Road Surface Distinction Method Based on Integral of Reflected Wave Using Ultrasonic Sensors .541.....	541
<i>Hidemitsu Arimura (Yamaguchi University, Japan), Masahiro Yamamoto (Yamaguchi University, Japan), Shenglin Mu (Ehime University, Japan), and Shota Nakashima (Yamaguchi University, Japan)</i>	
Study on a Differential Evolution Type Neural Network for Intelligent Control of Ultrasonic Motor on a Meal-Assistance Robot .545.....	545
<i>Tomohiro Matsumoto (Ehime University, Japan), Shenglin Mu (Ehime University, Japan), Satoru Shibata (Ehime University, Japan), Tomonori Yamamoto (Ehime University, Japan), Shota Nakashima (Yamaguchi University, Japan), and Kanya Tanaka (Meiji University, Japan)</i>	
An Intelligent PID Control using Neural Networks for Pneumatic Servo Systems .549.....	549
<i>Akito Taniguchi (Ehime University, Japan), Shenglin Mu (Ehime University, Japan), Satoru Shibata (Ehime University, Japan), and Tomonori Yamamoto (Ehime University, Japan)</i>	
Subject Posture Recognition by Support Vector Machine using Obrid-Sensor .553.....	553
<i>Yuki Horikawa (Yamaguchi University, Japan), Daichi Hamasuna (Yamaguchi University, Japan), Atsushi Matsubara (Yamaguchi University, Japan), and Shota Nakashima (Yamaguchi University, Japan)</i>	
Multi-lead Data Extraction Method of ECG Waveform Based on Mobile Device Application .557....	557
<i>Jun-Ying Chen (Fuzhou University, China) and Liang-Hung Wang (Fuzhou University, China)</i>	
Author Index 561	561