

2019 8th International Conference on Innovation, Communication and Engineering (ICICE 2019)

**Zhengzhou, Henan Province, China
25 – 30 October 2019**



**IEEE Catalog Number: CFP19ZIO-POD
ISBN: 978-1-7281-5840-2**

**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: | CFP19ZIO-POD |
| ISBN (Print-On-Demand): | 978-1-7281-5840-2 |
| ISBN (Online): | 978-1-7281-5839-6 |

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

| | |
|---------------------------------------------------------------------------------------------------------------------------|-----------|
| Multilevel Redundancy/Replication Schemes for Adaptive Reliability Enhancement of File System | 1 |
| <i>Yi-Hua Chen, Yu-Ting Hsiao, Po-Chun Huang</i> | |
| Adaptive Truncation of Channel Impulse Response and Its Performance Evaluation | 6 |
| <i>Shingchern D. You, Ching-Wen Yeh, Yu-Sun Liu</i> | |
| A Selective Write Strategy for the Elimination of Write Disturb Errors on Nonvolatile Memory Caches | 10 |
| <i>Yun-Shan Hsieh, Yi-Hua Chen, Yu-Ping Tang, and Po-Chun Huang</i> | |
| Automatic Assessment System of Pulse Diagnosis for Treatment Effect Evaluation | 14 |
| <i>Kai-Ming Shen, Che-Wei Chang</i> | |
| Design and Evaluation of 3D Selection in Mobile VR Environments | 17 |
| <i>Gang Ren, Xiao Liu, Jingfu Liu</i> | |
| Planar Tracking Based on Deep Learning | 21 |
| <i>Chi-Yi Tsai, Yen-Chang Feng</i> | |
| A Blind Aid System Based on Jetson TX2 Embedded System and Deep Learning Technique | 25 |
| <i>Cheng-Yuan Chang, Siou-Hong Liou</i> | |
| Study of Adaptive Dynamic Replication Mechanism in Mobile Edge Computing Environment | 30 |
| <i>Mao-Lun Chiang, Bo-Ren Huang, Hong-Wei Chen, Hui-Ching Hsieh, Ting-Yi Chang</i> | |
| A Novel FlexRay/Ethernet Gateway for In-vehicle Networks | 33 |
| <i>Trong-Yen Lee, Ren-Hong Liao, I-An Lin, Ju-Tse Tsai, Chih-Ting Kuo, Chen-Chia Chen, Chien-Ming Wu, Chun-Ming Huang</i> | |
| Design of a New Routing Device for Network System Applications | 36 |
| <i>Po-Tsung Wu, Tsair-Chun Liang</i> | |

| | |
|-------------------------------------------------------------------------------------------------------------------------------------|-----------|
| Hiding Secret Image in Absolute Moment Block Truncation Code By Using a Block-Selection Scheme | 39 |
| <i>Jhe-Huei Liao, Ji-Hwei Horng, Chih-Hung Lee, Haoying Lu</i> | |
| Development of physiological data monitoring system for cancer radiotherapy | 43 |
| <i>Pei-Wei Shueng, Ming-Che Wu, Huai-Kuei Wu, You-Chin Ling, Min-Xiang Peng, Zheng-Long Li, Tei-Wei Hung, Shui-Tian Wu</i> | |
| High Efficiency Optical Coupler Designed for Daylighting System | 45 |
| <i>Hsi-Chi Chen, Wei-Chieh Tseng, Shr-Hsuan Chen, Tsai-Hsien Yang, Yi-Yung Chen, Jong-Woei Whang</i> | |
| Modal Squeeze in Depressed-clad Photonic Crystal Fibers | 49 |
| <i>Jui-Ming Hsu, Tzu-Yi Tsai</i> | |
| A study on wear resistance of the polymer drivers for the panel cutting | 52 |
| <i>Yuh-Ping Chang, Li-Ming Chu, Hsiang-Yu Wang, Jin-Chi Wang</i> | |
| Electrical Performances of NFinFET and PFinFET Transistors Correlating Processing Conditions and Scales of the Fin Structure | 55 |
| <i>Hsin-Chia Yang, Rui-Sheng Chen, Ya Yuan Yang, Chun-Kai Tseng, Chia-Juan Tsai, Jian-Jia Tseng, Sung-Ching Chi, Yu-Jung Liao</i> | |
| Temperature Effects on Electrical Performances of NFinFET Transistors with Channel Length 90 nanometers | 59 |
| <i>Hsin-Chia Yang, Chia-Juan Tsai, Chun-Kai Tseng, Ya Yuan Yang, Rui-Sheng Chen, Jian-Jia Tseng, Sung-Ching Chi, Yu-Jung Liao</i> | |
| Exploring Target Size and Visual Distance of a Responsive Eye-Controlled System | 62 |
| <i>Ting-Yu Wei, Chun-Ching Chen</i> | |
| An Improved Position Sensorless Drive System Design of Brushless DC Motor by Terminal Voltage Difference | 66 |
| <i>Chiu-Keng Lai, Wei-Ting Lin, Guan-You Chen</i> | |
| Development of a Smart Cane to Utilize Ultrasonic Sensing to Extend the Detection Range of Cane Techniques | 70 |
| <i>Nan-Ching Tai, Pin-Hui Jiang, Jeih-Jang Liou</i> | |
| Increasing PE Utilization with a SW/HW Co-Design Technique for Sparse Convolutional Neural Networks | 74 |
| <i>Wei-Fan Tseng, Bo-Cheng Lai, Jyun-Wei Pan</i> | |

| | |
|---------------------------------------------------------------------------------------------------------------------------------------------------------|-----|
| The HMM-based Sensing Correction Method for Leap Motion Finger Tracking | 78 |
| <i>Lien-Chuan Huang, Tsung-Ying Sun</i> | |
| Watermelon Recognition and Yield Estimation Using Mathematical Morphology and Naï ve BayesianClassifier from Air Borne Image of Watermelon Field | 82 |
| <i>Hsin-Chuan Hsu, Ming-Jui Ho, Tsung-Ying Sun</i> | |
| An Efficient Recognition Method for Watermelon Using Faster R-CNNwith Post-Processing | 86 |
| <i>Ming-Jui Ho, Yu-Chin Lin, Hsin-Chuan Hsu, Tsung-Ying Sun</i> | |
| Optimize the Tree Routing efficiency in Wireless Sensor Network by Using Orphan Nodes | 90 |
| <i>Ming-Hua Chen, Wen-Shyang Hwang, Yan-Jing Wu, Cheng-Han Lin ,Wen-Ming Chen</i> | |
| The Enhancement of Graphic QR Code Recognition Using Convolutional Neural Networks | 94 |
| <i>Jong-Kai Lee, Yu-Mei Wang, Chun-Shien Lu, Hsi-Chun Wang, Tzren-Ru ChouI</i> | |
| Using Camera Array to Detect Elderly Falling and Distribute Alerting Media for Smart Home Care | 98 |
| <i>Chih-Lin Hu, Chitrin Bamrung, Wasita Kamintra, Somchoke Ruengittinun, Pattanasak Mongkolwat,Lin Hui, Shih-Hsiang Lo</i> | |
| A Study of the Application of Phase Change Energy Storage Material to Building Materials | 102 |
| <i>Huann-Ming Chou, Chien-Te Liu, Kao-Wei Chen</i> | |
| Machine Learning-based Automated Data Visualization: A Meta-feature Engineering Approach | 107 |
| <i>Hee-Won Choi, Seung-yeop Shin, Han-joon Kim</i> | |
| CarView Plus: A Social-Based Live Media Distribution Platform in Vehicular Networks | 110 |
| <i>Chih-Lin Hu, Kun-Yu Lin, Sheng-Zhi Huang, Yu-Kai Huang, Hsiang-Yuan Chiu , Lin Hui</i> | |
| Integrate non-IP Multimedia Subsystem devices in IP Multimedia Subsystem services | 114 |
| <i>Jian-Wei Li, Yu-Hung Huang</i> | |
| Fingerprint Indoor Positioning Method with Deep Learning | 117 |
| <i>Jian-Wei Li, Wei-Hsiang Hsu, Chun-Cheng Peng</i> | |

| | |
|-----------------------------------------------------------------------------------------------|-----|
| Space Borrowing System based on Internet of Things Technology | 121 |
| <i>Jian-Wei Li, Yu-Cheng Huang, Yi-Chun Chang</i> | |
| Label Reuse Scheme in MPLS Networks based on Optical CDMA | 126 |
| <i>Chao-Chin Yang</i> | |
| Two-Stage License Plate Recognition System Using Deep learning | 132 |
| <i>Cheng-Hung Lin, Yi-Sin Sie</i> | |
| Multiband Slot Antenna with E-Shaped Stripe using Microstrip Feeding | 136 |
| <i>Shih-Cheng Lin, Chih-Yu Cheng</i> | |
| Intrusion Locating Simulation Based on Optical Fiber Sensing | 139 |
| <i>Kai-Shuo Hsu, Tai-Lang Jong, Chi-Wen Hsieh</i> | |
| Development of Following Vehicle Prototype using Robot Operating System | 142 |
| <i>Yun-Shuai Yu, Chih-Heng Ke, Yeong-Sheng Chen, Pin-Yuan Yu</i> | |
| An Improved Dimensionality Reduction Fitting Algorithm Based on 3D Cellular Model | 145 |
| <i>Linqiu Wang, Tungchun Shen, Chintan Lee</i> | |
| Design and Performance Evaluation of a P4 based Load Balancer | 149 |
| <i>Shih-Jung Hsu, Chih-Heng Ke, Yeong-Sheng Chen, Cheng-Feng Hung, Yu-Wen Lo</i> | |
| PILDroid: A System for Detecting the Leakage of Privacy Information Using the JNI | 153 |
| <i>Yeoneo Kim, Jinseob Kim, Xiao Liu, Junseok Cheon, Gyun Woo</i> | |
| A Partial Grading Method Using Pattern Matching for Programming Assignments | 157 |
| <i>Xiao Liu, Yeoneo Kim, Junseok Cheon, Gyun Woo</i> | |
| A New Structure of Test Mass for Ground-used Electrostatically Suspended Accelerometer | 161 |
| <i>Zheng-rong Zheng, Xiao-xia He, Feng-tian Han, Yun-feng Liu, Rong Zhang</i> | |

| | |
|----------------------------------------------------------------------------------------------|-----|
| Apply Kinect and Zenbo to Develop Interactive Health Enhancement System | 165 |
| <i>Chia-Fen Hsieh, Yu-Rong Lin, Ting-You Lin, Yi-Hsin Lin, Mao-Lun Chiang</i> | |
| Image Steganography Using Contrast Enhancement Technique | 169 |
| <i>Ji-hwei Horng, Chih-Hung Lee, and Shan-Cheng Yang</i> | |
| Expandable Neuron Cell with Current-steering DAC for Deep-Learning <i>Yit</i> | 174 |
| <i>Fan Lo, Ming-Jie Liu, Muh-Tian Shiue</i> | |
| CMOS Low-Cost and Wide-Range Time-to-Digital Converter | 178 |
| <i>Chun-Chi Chen and Yen-Chan Chu</i> | |
| A Contactless Method for High Resolution Roundness Detection Technology | 182 |
| <i>Kai-Jan Lin</i> | |
| Towards the Design of Effective and Interactive Experience for Virtual Reality Videos | 186 |
| <i>Xinye Hong, Lingxiao Meng, Gang Ren</i> | |
| End Milling of Workpiece Surfaces in Various Cutting Fluid Environments | 191 |
| <i>Tsai, Meng-Hsun</i> | |
| Author Index | 198 |