2020 8th International Conference on Orange Technology (ICOT 2020)

Daegu, South Korea
18 – 21 December 2020
# TABLE OF CONTENTS

THE DESIGN OF 3S DATA COMPREHENSIVE APPLICATION PAYLOAD OF MICRO-NANO SATELLITE ............................................................................................................................................ 1  
Ying Xia, Bo Zhou

MOBILE LIGHT SPOTS DETECTION AND TRACKING OF VEHICLE TARGET IN DIM LIGHT ENVIRONMENT ........................................................................................................................................ 5  
Gaifang Xin, Jun Zhu, Chengming Luo, Jing Tang, Zhijian Pei, Erhua Wang

PREPROCESSING AND CHARACTERISTIC STATISTICS OF BLOOD CELL IMAGES BASED ON DELPHI ......................................................................................................................................... 10  
Liangliang Li, Yeqing Wang, Qiang Yao

DESIGN AND IMPLEMENTATION OF A VIRTUAL REALITY INSECTS LEARNING SYSTEM WITH ITS USER EXPERIENCE EVALUATION ........................................................................... 14  
An-Chao Tsai

DECISION ANALYSIS OF NUCLEAR POWER INVESTMENT DEVELOPMENT UNDER CARBON PRICE ............................................................................................................................................... 18  
Xiaohua Zou, Chuan Zhu, Mingsheng Ling, Xingzi Chang

THE IMPLEMENT OF PACKET TRACER AS UI TO MONITOR AND CONTROL REAL IOT DEVICES ........................................................................................................................................................... 23  
Yi-Chang Chen, Su-Shin Chen, Shih-Pang Tseng

ANALYSIS ON THE APPLICATION OF ARTIFICIAL INTELLIGENCE IN THE MEDICAL FIELD ................................................................................................................................................................. 27  
Dayang Jiang

TECHNOLOGY DRIVE ENTREPRENEURIAL DIGITAL BUSINESS TRANSFORMATION ................................................................. 31  
Jarot S. Suroso, Emil R. Kaburuan, Adrianus Kelvin, Alvin, Elko Priatama

RESEARCH ON THE CURRENT SITUATION AND DEVELOPMENT TREND OF LIVE WEBCASTING OF IMPORTANT SPACE MISSIONS ................................................................................... 38  
Ren Da, Wang Shuyi, Chee-Yong Kim

AN ATTENDANCE SYSTEM DESIGN BASED ON RFID TECHNOLOGY .................................................................................................................... 42  
Lijuan Shi, Qing Li

ROBOT AS AN CONSTRUCTIVE LEARNING TOOL FOR COMPUTER PROGRAMMING: THE PRACTICES IN TAIWAN ....................................................................................................................... 46  
Shih-Pang Tseng, Jhing-Fa Wang

ANALYZING AND DESIGNING CONVERSATIONAL BANKING SERVICE ARCHITECTURE FOR BANKING COMPANY ..................................................................................................................... 49  
Emil Robert Kaburuan, Adrianus Kelvin, Jery

OPTIMIZATION OF HUMAN BODY ATTITUDE DETECTION BASED ON MASK RCNN ........................................................................ 53  
Zhenhua Yin, Xiaoang Wang, Lingli Li

EMULATING 1-WIRE EEPROM CHIP IN SURGICAL ROBOT INSTRUMENT SYSTEM BASED ON MICROPROCESSOR .................................................................................................................................... 57  
Zhai Wenzheng
THE PERFORMANCE EVALUATION OF KNOWLEDGE MANAGEMENT SYSTEMS IMPLEMENTATION IN THE ORGANIZATION ........................................................... 61
Emil Robert Kaburuan, Wahyu Sardjono

IS STRATEGIC PLANNING DEVELOPMENT BASED ON UNIFIED THEORY OF ACCEPTANCE AND USE OF TECHNOLOGY ANALYSIS RESULT ........................................... 67
Emil Robert Kaburuan, Wahyu Sardjono

REAL-TIME OBJECT DETECTION OF RETAIL PRODUCTS FOR EYE TRACKING ........... 73
Wu Fang, Kezheng Zhang

RESEARCH AND APPLICATION OF INTELLIGENT VOICE FOOD ORDERING SYSTEM ........ 77
Xiaogang Wang, Peng Song, Lingli Li

DIGITAL BATIK MUSEUM WEBSITE DESIGN USING USER CENTRED DESIGN (UCD) METHOD ................................................................. 80
Matius Richard, Emil R. Kaburuan

A NEW DESIGN FOR VIDEO MARKETING UNDER THE NEW AGRIBUSINESS MODEL ........ 85
Zhao Yu-Xuan

CHAIN ANALYSIS OF NEW ENERGY INDUSTRY IN CHINA ........................................ 89
Ning He, Wenbo Wang

HYBRID DEEP NEURAL NETWORK ACOUSTIC MODEL FOR TAIWANESE SPEECH RECOGNITION .............................................................. 95
Che-Wen Chen, Yu-Fu Yeh, Chun-Liang Lin, Shih-Pang Tseng, Jhing-Fa Wang

TEMPERATURE RISE TEST ON MEDIUM VOLTAGE SWITCHGEAR ASSEMBLY BASED ON IEC STANDARD ...................................................... 100
Samat Iderus, Geno Peter

MITIGATING SPARSITY AND COLD START PROBLEM IN COLLABORATIVE FILTERING USING CROSS-DOMAIN SIMILARITY ........................................... 105
Pradeep Kumar Singh, Pijush Kanti Dutta Pramanik, Garima Ahuja, Anand Nayyar, Vaibhav Pandey, Prasenjit Choudhury

STUDY ON MEDICAL INFORMATION RESOURCE SHARING SYSTEM BASED ON CLOUD COMPUTING ......................................................... 111
Tang Xiao-Yan

ARBITRARY AXIS-ALIGNED AND MULTI-SCALE DRUG RECOGNITION SYSTEM ........ 114
Che-Wen Chen, An-Chao Tsai, Wei-Yen Chang, Hsuan-Fu Huang, Jhing-Fa Wang

DESIGN ON MODELING OF MULTIMODAL DEPRESSION AIDED DIAGNOSIS FROM PSYCHOLOGICAL PERSPECTIVE ........................................ 118
Renjun Li, Xiaoyong Lu, Tao Pan, Daimin Shi, Yang Liu, Jingyi Yuan

CUSTOMER CHURN PREDICTION MODELS FOR PT. XYZ INSURANCE ...................... 123
Tuga Mauritius, Kristianto, Reagen Y. Sayoga, Natanael Alamas, Marcelina Anggraeni, Faisal Binsar

THE NEURAL SLIDING-MODE CONTROL WITH ACTOR-CRITIC FOR NONLINEAR SYSTEM ......................................................................................... 129
Chun-Cheng Wei, Bin Qin, Lon-Chen Hung, Ching-Wen Chen, Shih-Pang Tseng
FAULT DETECTION IN PHOTOVOLTAIC SYSTEMS USING MACHINE LEARNING ALGORITHMS: A REVIEW .......................................................... 132
Ashvi Kumaradurai, Yuvaraja Teekaraman, Thierry Coosemans, Maarten Messagie

DESIGN AND IMPLEMENTATION OF TEACHING QUALITY ASSESSMENT SYSTEM BASED ON ANALYTIC HIERARCHY PROCESS FUZZY COMPREHENSIVE EVALUATION METHOD .............................................. 137
Xin Guo, Min Gao, Minghuan Zhang, Ying Chen, Shih-Pang Tseng

SHELLFISH RECOGNITION BASED ON GABOR TRANSFORMATION AND PRINCIPAL COMPONENT ANALYSIS .......................................................... 140
Feng Yi-Ran, Tao Xue-Heng, Lee Eung-Joo

HUMAN ACTIVITY RECOGNITION BASED ON ACCELERATION SENSOR AND NEURAL NETWORK .......................................................... 143
Zhai Wenzheng

FORECASTING COVID-19 CASES USING MULTIPLE STATISTICAL MODELS .......................................................... 148
Faisal Saeed, Anand Paul, Muhammad Jamal Ahmed

MACHINE LEARNING-BASED AUTOMATED PROBLEM CATEGORIZATION IN A HELPDESK TICKETING APPLICATION .......................................................... 153
Albert Miliano, Ignatius Steven, Krisananda Putera Kosim, Riyanto Jayadi, Tuga Mauritsius

ENHANCED PREDICTION FOR INVESTMENT PORTFOLIO MANAGEMENT USING MULTIPLE KERNEL-BASED LONG SHORT-TERM MEMORY-NETWORK FOR NICKEL PRICE PREDICTION .......................................................... 159
G. Padmavathi, N. Valliammal, Barani Shaju, Anandkumar Balasubramaniam, Anand Paul

A DATA MINING EXPERIMENT ON SEER DATABASE USING ARTIFICIAL NEURAL NETWORK .......................................................... 166
Xin-Yi Zhong, Zhu-Fei Cai, Shi-Jun Zhou, Jia-Lei Ding, Chen Xie, Xuan-Yu Wu, Ying Chen

AN EFFICIENT DEEP CONVOLUTIONAL NEURAL NETWORK FOR SEMANTIC SEGMENTATION .......................................................... 170
Bekhzod Olimov, Jeonghong Kim, Anand Paul, Barathi Subramanian

CONSTRUCTING LEGACY AND SELF-FULFILLMENT IN AGING PROCESS: A CHINESE INSIGHT .......................................................... 179
Wen-Liu, Shyhnan Liou

RESEARCH ON SERVICE-ORIENTED INTEGRATION OF HOSPITAL APPLICATION SYSTEM .......................................................... 183
Yin Zhaoyan, Tang Xiaoyan

BUILDING HEALTHY AGEING: THE DYNAMICS OF SELF-FULFILLMENT IN OLD AGE .......................................................... 187
Yu-Min Lin, Shyhnan Liou

HIERARCHY OF SHAPING A GOOD OLD AGE: FROM ABSENCE OF HEALTH LIMITATION TO MENTAL HEALTHINESS .......................................................... 192
Chien-Yu Hou, Shyhnan Liou

APPLICATION OF MULTIPLE BERT MODEL IN CONSTRUCTION LITIGATION .......................................................... 196
Che-Wen Chen, Wen-Chieh Chung, Jhing-Fa Wang, Shih-Pang Tseng

ANALYSIS OF E-COMMERCE SYSTEM IN MARKETPLACE (SHOPEE INDONESIA) .......................................................... 200
Jarot S. Suroso, Emil R. Kaburuan, Derrick Lee, Nayaka Suranadi Tama, Kevin Tee
OCCLUSION RESISTANT FACE DETECTION AND RECOGNITION SYSTEM ................................................................. 204
An-Chao Tsai, Yang-Yen Ou, Wei-Ching Wu, Jhing-Fa Wang

WEIGHT DROPOUT FOR PREVENTING NEURAL NETWORKS FROM OVERFITTING ........................................ 208
Karshiev Sanjar, Abdul Rehman, Anand Paul, Kim Jeonghong

AVATAR SOCIAL SYSTEM ON SELF-ASSOCIATED EMOTIONAL EMPATHY PERCEPTIONS ................................................................. 212
Xueguang Jin, Zichun Guo, Haifei Zhou, Chunfen Hu, Weidong Zhang, Hua Lou

APPLICATION OF BIG DATA IN IMPROVING COLLEGE STUDENTS’ HAPPINESS ........................................ 216
Jianjian Luo

A PROTOTYPE OF SMART LOCK BASED ON INTERNET OF THINGS FOR LOGISTICS SAFETY ................................................................. 219
Wenqing Xu, Shih-Pang Tseng, Yinzhong Qian

THE DESIGN AND APPLICATION OF PHOTOVOLTAIC POWER GENERATION SYSTEMS ...................... 222
Chuanqing Sun, Libin Zhang

INCREASING IS SECURITY USING RISK MANAGEMENT ON FINTECH ................................................................. 226
Jarot S. Suroso, Emil R. Kaburuan, Aqsha, Ayu Ratna Lalita Sudjana, Rike Nurjannah

TRANSREGIONAL INSTITUTIONAL LEARNING BETWEEN NINGXIA AND TAIWAN: A HIGHER VOCATIONAL EDUCATION EXPERIMENT ................................................................. 232
Yan Duan, Shih-Pang Tseng

ON THE DEVELOPMENT OF CONTINUING EDUCATION TECHNOLOGY IN AN AGING SOCIETY .......... 235
Haiying Zhou

GENETIC ANALYSIS FOR BREAST CANCER PREDICTION AND DIAGNOSIS ................................................................. 239
Anusha Ganesan, Ganesan Nagabushnam, Anand Paul, Kyong Hoon Kim

RESEARCH ON THE VALUE OF THE CONSTRUCTION OF INTELLIGENT SPORTS PARK FOR PERFECTING PUBLIC SPORTS SERVICE SYSTEM ................................................................. 243
Junhong Li

DESIGN OF A PROBLEM-BASED CURRICULUM: A CONSTRUCTIVE APPROACH FOR MOBILE APP LEARNING ................................................................. 248
Fang Chen, Jui-Le Chen, Shih-Pang Tseng

DC-TSEN: A DUAL-CHANNEL TIME-DOMAIN SPEECH ENHANCEMENT NETWORK ......................................................... 251
Yihui Fu, Sining Sun, Lei Xie

VISIBLE LIGHT COMMUNICATION CODING METHOD BASED ON EAN-8 ................................................................. 256
Xinyuan Luan

RESEARCH ON APPLICATION OF VARIOUS REGRESSION PREDICTION MODELS IN WOOD COMPOSITE PRODUCTS ................................................................................................................................. 260
Zhijian Pei

A STUDY ON CHILDREN’S CHOICE PREFERENCE OF 3-6 YEARS OLD FOR INTELLIGENT DEVELOPMENT GAMES ................................................................................................................................. 270
Lei Zhang, Chee-Yong Kim
RESEARCH ON THE INFLUENCING FACTORS OF THE TRAINING EFFECT OF DISASTER MEDICINE EMERGENCY COURSE BASED ON APRIORI ASSOCIATION RULE ANALYSIS .......................................................... 274
Xin Guo, Shih-Pang Tseng, Ying Chen, Yichen Yang, Meng Ji, Lujia Tang

RESEARCH ON THE RELATIONSHIP BETWEEN THE FREQUENCY SPECTRUM CHARACTERISTICS AND THE VIBRATION RESPONSES OF A GINKGO BILOBA TREE .......... 277
Huan Lin, Lin-Yun Xu, Hong-Ping Zhou

BUSINESS PROCESS MANAGEMENT FOR STARTUP IN INDONESIA .......................................................... 282
Jarot S. Suroso, Emil R. Kaburuan, Kenneth, Eman Sulaeman, Riva

IDENTIFICATION OF E-COMMERCE BUSINESS APPROACHES TO IMPROVE CUSTOMER SATISFACTION .......................................................... 289
Jarot S. Suroso, Emil R. Kaburuan, Josua Setyo, Jery

CONTROL OF CHAOTIC NONLINEAR SYSTEMS USING RBF NETWORK WITH REINFORCEMENT LEARNING .......................................................... 294
Wei Chun-Cheng, Hung Lon-Chen

A SURVEY ON THE MENTAL HEALTH LEVEL OF UNDERGRADUATES IN NORTHEAST CHINA .......................................................... 299
Du-Nan, Kim Chee-Yong

DATA-SPECIFIC ACTIVATION FUNCTION LEARNING FOR HYPERSPECTRAL IMAGE CLASSIFICATION .................................................................................. 305
Yu Li, Wei Wei, Jinyang Zhang, Lei Zhang, Yanning Zhang

A SURVEY ON THE DEVELOPMENT OF SMART GRID IN CHINA .......................................................... 309
Ning He, Xiaohua Zou

MODEL DESIGN OF TEACHERS’ CURRICULUM TEACHING HAPPINESS IMPROVEMENT SYSTEM IN HIGHER VOCATIONAL COLLEGES .......................................................... 313
Shaoqin Lu

PROMO ABUSE MODELING IN E-COMMERCE USING MACHINE LEARNING APPROACH .................................................................................. 317
Tuga Mauritius, Sofia Alatas, Faisal Binsar, Riyanto Jayadi, Nilo Legowo

AN EFFICIENT DATA COLLECTION AND ANALYSIS SYSTEM FOR TEACHING EVOLUTION .................................................................................. 323
Zhong-Jie Liu, Shih-Pang Tseng

ENTREPRENEUR OF INTERNET OF THINGS (IOT) IN PORTABLE HYDROPONIC .......................................................... 326
Jarot S. Suroso, Emil R. Kaburuan, Natasha Angelica, William Tanujaya, Fadli Munandar

Author Index