

# **2019 International Conference on Machine Learning and Cybernetics (ICMLC 2019)**

**Kobe, Japan  
7 – 10 July 2019**



**IEEE Catalog Number: CFP19523-POD  
ISBN: 978-1-7281-2817-7**

**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:	CFP19523-POD
ISBN (Print-On-Demand):	978-1-7281-2817-7
ISBN (Online):	978-1-7281-2816-0
ISSN:	2160-133X

**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](mailto:curran@proceedings.com)  
Web: [www.proceedings.com](http://www.proceedings.com)

CURRAN ASSOCIATES INC.  
**proceedings**  
.com

# Contents

<b>Greetings from General Chairs .....</b>	<b>I</b>
<b>Greetings from Program Chairs .....</b>	<b>II</b>
<b>Organizing Committee .....</b>	<b>III</b>
<b>Program Committee .....</b>	<b>VI</b>
<b>List of Reviewers .....</b>	<b>VII</b>

## Contributed Papers

<b>DEVELOPING THE INTERPRETABILITY OF DEEP ARTIFICIAL NEURAL NETWORK ON APPLICATION PROBLEMS</b> SHENG-AN YANG, MENG-HAN YANG.....	1
<b>IDENTIFICATION OF ALTERNATIVE SPLICING CHARACTERISTIC ASSOCIATED WITH CLEAR-CELL OVARIAN CANCER FROM PAIRED NORMAL AND TUMOR TISSUES</b> TU-TING HUANG, MENG-SHIN SHIAO, CHEN-AN TASI, KUER-YUAN LAN, CHIEH-HSI LIN, NATINI JIANAWATH, JIA- MING CHANG .....	7
<b>PREDICTIVE MODELING AND CONTROL OF ENERGY DEMAND FOR HYBRID ELECTRIC VEHICLE SYSTEMS</b> DI SHEN, CHENG-CHEW LIM, PENG SHI .....	12
<b>ECG BIOMETRICS METHOD BASED ON CONVOLUTIONAL NEURAL NETWORK AND TRANSFER LEARNING</b> YEFEI ZHANG, ZHIDONG ZHAO, CHUNWEI GUO, JINGZHOU HUANG, KAIDA XU .....	18
<b>USING NEURAL NETWORKS TO LABEL RAIN WARNING FOR NATURAL HAZARD OF SLOPE</b> CHENG-YUAN TANG, WHEI-WEN CHENG, TZU-YEN HSU, CHING-JIANG JENG, YI-LEH WU .....	25
<b>USING FEATURE SPATIAL ORDER IN PROGRESSIVE IMAGE FEATURE MATCHING</b> CHIN-HUNG TENG, BEN-JIAN DONG .....	31
<b>EXPLORING AND EVALUATING THE SCALABILITY AND EFFICIENCY OF APACHE SPARK USING EDUCATIONAL DATASETS</b> JIAN ZHANG, ZIJIANG YANG, YOUNES BENSLIMANE.....	37
<b>MULTI-NOZZLE PNEUMATIC EXTRUSION BASED ADDITIVE MANUFACTURING SYSTEM FOR FABRICATING A SANDWICH STRUCTURE WITH SOFT AND HARD MATERIAL</b> KAI-WEI CHEN, MING-JONG TSAI.....	43
<b>AN ACCELERATION METHOD FOR COMPUTING DOMINANCE CLASSES IN ORDERED INFORMATION SYSTEM</b> YAN LI, JING ZHANG, QIANG HE, SIYUAN LIU, LUJING HUO.....	49
<b>NEWS RECOMMENDATION BASED ON COLLABORATIVE SEMANTIC TOPIC MODELS AND RECOMMENDATION ADJUSTMENT</b>	

YU-SHAN LIAO, JUN-YI LU, DUEN-REN LIU .....	54
<b>USE SSD TO DETECT THE DIGITAL REGION IN ELECTRICITY METER</b>	
CHUN-MING TSAI, TAWEI DAVID SHOU, JUN-WEI HSIEH, SHAO-CHI CHEN .....	60
<b>HUMAN FACE SENTIMENT CLASSIFICATION USING SYNTHETIC SENTIMENT IMAGES WITH DEEP CONVOLUTIONAL NEURAL NETWORKS</b>	
CHEN-CHUN HUANG, YI-LEH WU, CHENG-YUAN TANG.....	67
<b>EXPLORING THE LIMB POSITION EFFECT ON WEARABLE-ULTRASOUND-BASED GESTURE RECOGNITION</b>	
XING-CHEN YANG, JI-PENG YAN, YI ZHAO, HONG-HAI LIU .....	72
<b>A DECISION-THEORETIC ROUGH SET APPROACH TO LATTICE-VALUED INFORMATION SYSTEM</b>	
JIANHANG YU, HIROSHI MORITA, MINGHAO CHEN, WEIHUA XU .....	78
<b>A STUDY ON ELECTRIC SCOOTERS FOR THE ELDERLY BY APPLYING FUZZY THEORY</b>	
CHUN-WANG LEE .....	84
<b>ON OPTIMAL ENERGY CONSUMPTION CONTROL METHOD FOR TAIL FIN BIONIC ROBOTIC FISH</b>	
GUI-HAI LI, GANG LIU, YU-XUAN LI, SONG-LIN CHEN .....	89
<b>SUBSPACE CLUSTERING AND FEATURE EXTRACTION BASED ON LATENT SPARSE LOW-RANK REPRESENTATION</b>	
LINA ZHAO, FANG MA, HONGWEI YANG .....	95
<b>NUMERIC PREDICTION OF DISSOLVED OXYGEN STATUS THROUGH TWO-STAGE TRAINING FOR CLASSIFICATION-DRIVEN REGRESSION</b>	
PENGFEI GUO, HAN LIU, SHUANGYIN LIU, LONGQIN XU .....	101
<b>HARDWARE-SOFTWARE CODESIGN OF HISTOGRAM OF ORIENTED GRADIENTS ON HETEROGENEOUS COMPUTING PLATFORM</b>	
YUAN-KAI WANG, HUNG-YU CHEN, KUAN-YU CHEN, SHIH-YU HUANG .....	107
<b>INTELLIGENT ROBOT NAVIGATION BASED ON HUMAN EMOTIONAL MODEL IN HUMAN-AWARE ENVIRONMENT</b>	
TAKENORI OBO, YUTO NAKAMURA .....	114
<b>AN INFORMATION DIFFUSION PATH CONSTRUCTION ALGORITHM BASED ON USER CHARACTERISTICS AND TEXT CHARACTERISTICS</b>	
XIAO YANG, XIUZHEN CHEN, JIN MA, SHENGHONG LI .....	120
<b>A WEARABLE DEVICE OF SALIVATION DETECTION AND IMPROVEMENT FOR ELDERLY AT HIGH RISK FOR DYSPHAGIA</b>	
CHIEN-NAN LEE, YIU-TONG CHU, LING CHENG, MENG-HSUAN SHIH, CHIA-WEI CHEN, DING-JIUN TZENG, CHUAN-CHE SHIH.....	127
<b>DEPTH IMAGE-BASED OBSTACLE AVOIDANCE FOR AN IN-DOOR PATROL ROBOT</b>	
ZHENG HAN JIANG, QIANGFU ZHAO, YOICHI TOMIOKA.....	133
<b>DETECTION OF OPTIMAL PUNCTURE POSITION IN OVUM IMAGES FOR ARTIFICIAL INSEMINATION</b>	
YUYA KINISHI, TOMOHIRO MAEKAWA, SHIMPEI MIZUTA, TOMOMOTO ISHIKAWA, YUTAKA HATA.....	139
<b>UTILIZATION OF THE INFRARED IMAGE CAPTURING COMBUSTION STATE FOR ESTIMATING THE STEAM FLOW AIMING TO STABILIZE GARBAGE POWER GENERATION</b>	
TAKUYA ANJIKI, KANTA MATSUBAYASHI, SHUNJI MAEDA .....	144

<b>AN EXPERIMENTAL STUDY ON THE EFFECTIVENESS OF ARTIFICIAL NEURAL NETWORK-BASED STOCK INDEX PREDICTION</b>	
YI CHI TSAI, QIANGFU ZHAO.....	149
<b>INTELLIGENT AND DISASTER PREVENTION HARD HAT BASED ON AIOT AND SPEECHES RECOGNITION</b>	
FENG-LONG HUANG, ZIH-ZRONG LIAO, TSUN-HONG WANG, QI-MING CHEN, TING-HUA WU, CHING-HSIANG CHANG	
.....	155
<b>RESEARCH ON COMPREHENSIVE QUALITY EVALUATION METHOD BASED ON COOPERATIVE PERFORMANCE</b>	
CHENG-BIN WANG, FA-CHAO LI.....	160
<b>APPLICATION OF ANT COLONY SYSTEM TO OPTIMAL THERMAL UNIT COMMITMENT</b>	
CHAORONG CHEN, CHIENNAN CHEN.....	166
<b>MULTI-PERSPECTIVE CREATION OF DIVERSITY FOR IMAGE CLASSIFICATION IN ENSEMBLE LEARNING CONTEXT</b>	
HAN LIU, SHYI-MING CHEN.....	172
<b>USING NON-PARAMETRIC REGRESSION METHODS TO ANALYZE THE IMPACT OF AIR POLLUTANTS ON PSYCHIATRIC &amp; NEUROLOGICAL ILLNESSES</b>	
PO-HSIANG TSENG, FU-YI YANG, MENG-HAN YANG.....	181
<b>ANALYZING CAUSAL RELATIONSHIPS OF SENSOR DATA AND INFRARED IMAGES TO STABILIZE GARBAGE POWER GENERATION</b>	
KANTA MATSUBAYASHI, TAKUYA ANJIKI, SHUNJI MAEDA.....	187
<b>ELECTRICITY CONSUMPTION FORECASTING OF BUILDINGS USING HIERARCHICAL ANFIS AND GRA</b>	
HAN-YUN CHEN, CHING-HUNG LE, BAO-MIN HUANG.....	193
<b>ENERGY EFFICIENT GEOCASTING BASED ON Q-LEARNING FOR WIRELESS SENSOR NETWORKS</b>	
NENG-CHUNG WANG, YOUNG-LONG CHEN, YUNG-FA HUANG, LI-CHENG HUANG, TZU-YI WANG, HSU-YAO CHUANG	
.....	200
<b>DEEP LICENSE PLATE RECOGNITION IN ILL-CONDITIONED ENVIRONMENTS WITH ILL-CONDITIONAL DATA AUGMENTATION</b>	
CHENG-CHANG LIEN, YU-CHUN CHIEN, FU-YU TENG, CHIH-CHIEH YANG.....	204
<b>REAL-TIME CAR DETECTION AND DRIVING SAFETY ALARM SYSTEM WITH GOOGLE TENSORFLOW OBJECT DETECTION API</b>	
CHENG-HSIUNG HSIEH, DUNG-CHING LIN, CHENG-JIA WANG, ZONG-TING CHEN, JIUN-JIAN LIAW.....	211
<b>RETRIEVING ARTICLES AND IMAGE LABELING BASED ON RELEVANCE OF KEYWORDS</b>	
SHU-CHEN CHENG, CHUN-AN LU.....	215
<b>AN INVERSE KINEMATIC SOLUTION BASED ON A TWO-LAYER HIERARCHICAL CLUSTER MODEL</b>	
XIAO-YUN LIU, HUI-YI LIU, JIE GAO.....	221
<b>AUTONOMOUS CROSS-FLOOR NAVIGATION SYSTEM FOR A ROS-BASED MODULAR SERVICE ROBOT</b>	
WEN-HSIN WANG, YI-HSING CHIEN, HSIN-HAN CHIANG, WEI-YEN WANG, CHEN-CHIEN HSU.....	227
<b>THERMAL FACE RECOGNITION UNDER DISGUISED CONDITIONS</b>	
SHINFENG D. LIN, KUANYUAN CHEN.....	233

<b>MULTI-VIEW COLLABORATIVE REPRESENTATION CLASSIFICATION</b>	
YINGSHAN TAO, HAOLIANG YUAN, CHUN SING LAI, LOI LEI LAI .....	240
<b>A DEVELOPMENT OF A SYSTEM TO MEASURE RADIOULNAR DISTANCE IN WRIST-JOINT ROTATION USING THREE-DIMENSIONAL ELECTROMAGNETIC SENSOR</b>	
KOUKI NAGAMUNE, AKITO NAKANO .....	246
<b>MULTI-TASK ENSEMBLE CREATION FOR ADVANCING PERFORMANCE OF IMAGE SEGMENTATION</b>	
HAN LIU, SHYI-MING CHEN .....	251
<b>DETECTION OF MICROPLASTICS USING MACHINE LEARNING APPROACH</b>	
ZENON CHACZKO, PETER WAJS-CHACZKO, DAVID TIEN, YOUSEF HAIDAR .....	258
<b>A QUANTIFICATION APPROACH OF UTERINE PERISTALSIS PROPAGATED FROM THE CERVIX AND THE FUNDUS</b>	
NAZIA TASNIM, FAHAD P. MAHDI, SAADIA B. ALAM, NAOMI YAGI, AKIRA NAKASHIMA, ISAMU KOMESU, YOSHIMITSU TOKUNAGA, TETSURO SAKUMOTO, SYOJI KOBASHI.....	266
<b>IMPROVING ALLERGENIC PROTEIN PREDICTION USING PHYSICOCHEMICAL FEATURES ON NON-REDUNDANT SEQUENCES</b>	
SHER SIGNH, JR-ROU CHIU, KUEI-LING SUN, EMILY CHIA-YU SU .....	272
<b>AUTOMATED ANALYZING SYSTEM FOR RECOGNIZING THE ELEMENTAL PROCESSES BASED ON THE LABELED LDA</b>	
KENTARO MORI, HIROSHI NAKAJIMA, YASUYO KOTAKE, DANNI WANG, YUTAKA HATA .....	278
<b>RECOGNIZING AND GRADING 3D MODELING OBJECTS USING YOLO BASED DEEP LEARNING NETWORK</b>	
HUI-HUI CHEN, CHIAO-WEN KAO, BOR-JIUNN HWANG, KUO-CHIN FAN .....	283
<b>THE EFFECT OF PARTICIPANTS' INTERACTIONS ON THE SUSTAINABILITY OF ONLINE COMMUNITIES</b>	
CHIN-SHENG YANG, KUN-HAN CHEN .....	288
<b>NEIGHBORHOOD CLASSIFIER FOR LABEL NOISE</b>	
XIANSHENG RAO, JINGJING SONG, XIBEI YANG, KEYU LIU, PINGXIN WANG .....	295
<b>MULTI-CLASS BRAIN AGE DISCRIMINATION USING MACHINE LEARNING ALGORITHM</b>	
HSIAO-CHI LI, CHANG-YU CHENG, MENG-LIN CHANG, CHIA-HUI CHOU, CHIEN-CHANG HSU, YI-SHIUAN CHIU, JYH-WEN CHAI .....	301
<b>HEAD MOTION RECOGNITION USING A SMART HELMET FOR MOTORCYCLE RIDERS</b>	
K.I. WONG, YI-CHUNG CHEN, TZU-CHANG LEE, SHENG-MIN WANG.....	307
<b>STABILIZATION OF INERTIA WHEEL INVERTED PENDULUM USING FUZZY-BASED HYBRID CONTROL</b>	
BO-RUI CHEN, CHUN-FEI HSU, TSU-TIAN LEE .....	314
<b>ELDERLY HEALTH CARE SYSTEM BASED ON HIGH PRECISION VIBRATION SENSOR</b>	
SHUAI SHAO, JINSOEK WOO, KOUHEI YAMAMOTO, NAOYUKI KUBOTA .....	320
<b>TIME SERIES FORECASTING USING OPTIMIZED ROLLING GREY MODEL</b>	
MING-FENG YEH, HUNG-CHING LU, TI-HUNG CHEN .....	326
<b>A CONCEPT FRAMEWORK OF USING EDUCATION GAME WITH ARTIFICIAL NEURAL NETWORK TECHNIQUES TO IDENTIFY LEARNING STYLES</b>	
CHIH-HUNG WU .....	332

<b>RHYMING KNOWLEDGE-AWARE DEEP NEURAL NETWORK FOR CHINESE POETRY GENERATION</b>	
WEN-CHAO YEH, YUNG-CHUN CHANG, YU-HSUAN LI, WEI-CHIEH CHANG .....	338
<b>AN IMPROVED SIAMESE NETWORK FOR FACE SKETCH RECOGNITION</b>	
LIANG FAN, HAN LIU, YUXUAN HOU .....	344
<b>DECONSTRUCTION OF PERCEPTION VERBS: STRUCTURE AND VALUE</b>	
YAN LIU, ZHENG-JUN LIN, YING PAN.....	351
<b>MULTI-CHANNEL CONVOLUTIONAL NEURAL NETWORK FOR TARGETED SENTIMENT CLASSIFICATION</b>	
TING YUAN, HAIHUI LI, HONGYA ZHAO, QIANHUA CAI, HAN LIU, XIAOHUI HU.....	356
<b>MULTIMODAL REPRESENTATION LEARNING: ADVANCES, TRENDS AND CHALLENGES</b>	
SU-FANG ZHANG, JUN-HAI ZHAI, BO-JUN XIE, YAN ZHAN, XIN WANG.....	362
<b>MOBILITY-BASED CLUSTERING WITH LINK QUALITY ESTIMATION FOR URBAN VANETS</b>	
HUEI-WEN FERNG, MUHAMMAD ABDULLAH.....	368
<b>AN ACCELEROMETER BASED GAIT ANALYSIS SYSTEM TO DETECT GAIT ABNORMALITIES IN CEREBRALSPINAL MENINGITIS PATIENTS</b>	
TUNG-HUA YU, CHAO-CHENG WU.....	375
<b>MULTI-TASK LEARNING WITH LOCALIZED GENERALIZATION ERROR MODEL</b>	
WENDI LI, YI ZHU, TING WANG, WING NG.....	380
<b>NANOCARBON ELECTRODE FOR WEARABLE DEVICE WITH FLEXIBLE MATERIAL</b>	
MAI KONDO, TAKAYUKI FUJITA, KENSUKE KANDA, KAZASUKE MAENAKA .....	388
<b>AN AUTOMATED IDENTIFICATION TOOL FOR LC-MS BASED METABOLOMICS STUDIES</b>	
KE-SHIUAN LYNN, CHUN-JU CHEN, CHI EN TSENG, MEI-LING CHENG, WEN-HARN PAN .....	394
<b>COST-SENSITIVE FEATURE SELECTION BASED ON LABEL SIGNIFICANCE AND POSITIVE REGION</b>	
JINTAO HUANG, WENBIN QIAN, BINGLONG WU, YINGLONG WANG .....	403
<b>FUZZY ADAPTIVE CONTROL FOR WIRELESS OPTIMAL CHARGING GANTRY ROBOT SYSTEM</b>	
WEN-SHYONG YU, YU-FENG LIN.....	410
<b>PREDICTION STOCK PRICE BASED ON DIFFERENT INDEX FACTORS USING LSTM</b>	
CHUN YUAN LAI, RUNG-CHING CHEN, REZZY EKO CARAKA.....	416
<b>ADVANCED CONVOLUTIONAL NEURAL NETWORK WITH FEEDFORWARD INHIBITION</b>	
LU LIU, SHULING YANG, DAMING SHI .....	422
<b>WATER LEVEL PREDICTION AT TICH-BUI RIVERS IN VIETNAM USING SUPPORT VECTOR REGRESSION</b>	
THANH-TUNG NGUYEN .....	427
<b>ESTIMATION OF HUMAN ACTIVITIES BY FUZZY CLASSIFICATION SYSTEMS FOR UNDERSTANDING SUBJECT PERSONS' SITUATION</b>	
SOLAIMAN AHMED, TAIKI KISHI, MANABU NII, KOHEI HIGUCHI, SYOJI KOBASHI .....	433
<b>REAL LIFE IMAGE RECOGNITION OF PANAMA DISEASE BY AN EFFECTIVE DEEP LEARNING APPROACH</b>	
CHENG-FA TSAI, YU-CHIEH CHEN, CHIA-EN TSAI.....	440
<b>AN OBJECT RECALL SYSTEM USING RGBD IMAGES</b>	
CHIN-PAN HUANG, CHAUR-HEH HSIEH, CHU-CHENG HUANG.....	445

<b>FACIAL EXPRESSION BASED EMOTION RECOGNITION EMPLOYING YOLOV3 DEEP NEURAL NETWORKS</b>	
GUAN-CHUN LUH, HUNG-BIN WU, YA-TING YONG, YU-JHIO LAI, YU-HAN CHEN.....	451
<b>BEHAVIOR ACQUISITION ON A MOBILE ROBOT USING REINFORCEMENT LEARNING WITH CONTINUOUS STATE SPACE</b>	
TOMOYUKI ARAI, YUICHIRO TODA, NAOYUKI KUBOTA.....	458
<b>AN EMPIRICAL STUDY ON THE CLASSIFICATION OF CHINESE NEWS ARTICLES BY MACHINE LEARNING AND DEEP LEARNING TECHNIQUES</b>	
CHUEN-MIN HUANG, YI-JUN JIANG.....	462
<b>SINGLE-IMAGE SUPER-RESOLUTION VIA MULTIPLE MATRIX-VALUED KERNEL REGRESSION</b>	
YI TANG, ZUO JIANG, JUN-HUA CHEN.....	468
<b>MULTI-LABEL ACTIVE LEARNING DRIVEN BY UNCERTAINTY AND INCONSISTENCY</b>	
RAN WANG, SUHE YE.....	475
<b>POSTURE ESTIMATION METHOD USING CUSHION TYPE SEAT PRESSURE SENSOR</b>	
TAKAHIRO TAKEDA.....	481
<b>COMMENTS ON "FINITE-TIME ANALYSIS OF THE MULTIARMED BANDIT PROBLEM"</b>	
LU-NING ZHANG, XIN ZUO, JIAN-WEI LIU, WEI-MIN LI, NOBUYASU ITO.....	487
<b>WOULD YOU TURN-ON GPS FOR LBA? FUZZY AHP APPROACH</b>	
HENG-LI YANG, SHIANG-LIN LIN, JUI-YEN CHANG.....	493
<b>SHORT-TEXT QUESTION CLASSIFICATION BASED ON DEPENDENCY PARSING AND ATTENTION MECHANISM</b>	
AN FANG.....	498
<b>PERSON RE-IDENTIFICATION VIA FEATURE REPRESENTATION LEARNING BASED ON VERIFICATION SAMPLE CONSTRAIN</b>	
RUIFENG ZHAO, AJIAN LIU, YANYAN LIANG, HAOZHI HUANG.....	504
<b>SUPERVISED LINK PREDICTION IN CO-AUTHORSHIP NETWORKS BASED ON RESEARCH PERFORMANCE AND SIMILARITY OF RESEARCH INTERESTS AND AFFILIATIONS</b>	
DOAA HASSAN.....	511
<b>DISTRIBUTION OF SYNTHETIC POPULATIONS OF JAPAN FOR SOCIAL SCIENTISTS AND SOCIAL SIMULATION RESEARCHERS</b>	
TADAHIKO MURATA, TAKUYA HARADA, MANABU ICHIKAWA, YUSUKE GOTO, LEE HAO, SUSUMU DATE, MASA HARU MUNETOMO, AKIYOSHI SUGIKI.....	517
<b>EFFICIENT BINOCULAR STEREO MATCHING BASED ON SAD AND IMPROVED CENSUS TRANSFORMATION</b>	
YUN ZHANG, WENXIANG CHEN, HAN LIU, JINHUA LIU, HUI DU.....	522
<b>DISCOVERING EMOTIONAL LOGIC RULES FROM PHYSIOLOGICAL DATA OF INDIVIDUALS</b>	
NECTARIOS COSTADOPOULOS, MD ZAHIDUL ISLAM, DAVID TIEN.....	528
<b>DEEP LEARNING IN NATURAL LANGUAGE PROCESSING: A STATE-OF-THE-ART SURVEY</b>	
JUNYI CHAI, ANMING LI.....	535
<b>INVESTIGATIONS ON CLASSIFICATION METHODS FOR LOAN APPLICATION BASED ON MACHINE LEARNING</b>	
MINGLI WU, YAFEI HUANG, JIANYONG DUAN.....	541



<b>A DEEP FEATURE FUSION METHOD FOR ANDROID MALWARE DETECTION</b>	
YUXIN DING, JIEKE HU, WENTING XU, XIAO ZHANG .....	547
<b>UNDERSAMPLING NEAR DECISION BOUNDARY FOR IMBALANCE PROBLEMS</b>	
JIANJUN ZHANG, TING WANG, WING W. Y. NG, SHUAI ZHANG, CHRIS D. NUGENT .....	553
<b>AUTOMATIC DETECTION OF MISPRONOUNCED LYRICS IN SINGING</b>	
WEI-HO TSAI, VAN-THUAN TRAN, SHIANG-SHIUN KUNG.....	561
<b>PHASE RETRIEVAL VIA WIRTINGER FLOW ALGORITHM AND ITS VARIANTS</b>	
JIAN-WEI LIU, ZHI-JUAN CAO, JING LIU, XIONG-LIN LUO, WEN-MIN LI, NOBUYASU ITO, LONG-CHUAN GUO .....	566
<b>DEVELOPMENT OF RULE-BASED AGENTS FOR AUTONOMOUS PARKING SYSTEMS BY ASSOCIATION RULES MINING</b>	
XIN YUAN, MICHAEL LIEBELT, PENG SHI, BRADEN PHILLIPS .....	575
<b>DEPRESSIVE SYMPTOMS AND FUNCTIONAL IMPAIRMENTS EXTRACTION FROM ELECTRONIC HEALTH RECORDS</b>	
YOU-CHEN ZHANG, WEI-CHE CHUNG, KUEI-HAN LI, CHENG-CHIEH HUANG, HONG-JIE DAI, CHI-SHIN WU, CHIAN-JUE KUO, CHU-HSIEN SU, HORNG-CHANG YANG .....	581
<b>STRESS ASSESSMENT FOR WORK PROFICIENCY ANALYSIS BY HEART RATE VARIABILITY</b>	
MOMOKA FUJIMOTO, HIROSHI NAKAJIMA, YASUYO KOTAKE, DANNI WANG, YUTAKA HATA .....	587
<b>A STUDY ON MACHINE LEARNING-BASED IMAGE IDENTIFICATION TOWARDS ASSISTIVE AUTOMATION OF COMMENTARY ON ANIMATION CHARACTERS</b>	
YU YOSHINO, KAZUKI NAKADA, MAKOTO KOBAYASHI, HISAYUKI TATSUMI .....	591
<b>PREDICTING DEMENTIA RISK TO DEPRESSIVE DISORDER PATIENTS: A CLASSIFICATION APPROACH</b>	
HSIAO-TING TSENG, HSIAO-CHI LI, CHIA-LUN LO, TAI-HSIANG SHEN, SHU-CHIUNG LIN .....	595
<b>IMPROVING RESIDUE-RESIDUE CONTACTS PREDICTION FROM PROTEIN SEQUENCES USING RNN-BASED LSTM NETWORK</b>	
WENJING CHEN, JIANFENG SUN, CHUNHUI GAO .....	601
<b>PERFORMANCE EVALUATION OF A MOBILE DEVICE SYSTEM USING FUZZY LOGIC CONTROL WITH MULTI-HOP IN A MULTI-RADIO OPPORTUNISTIC NETWORK</b>	
YOUNG-LONG CHEN, NENG-CHUNG WANG, JING-FONG CIOU, GUN-WEN XIAO, YI-SHANG LIU, PIN-LUN HUANG .....	608
<b>A BASIC STUDY ON RAILWAY FACILITY EXTRACTION USING A SINGLE-SHOT MULTI-BOX DETECTOR</b>	
MASAMI NAKAMURA, YUTA AOTO, SYUNJI MAEDA.....	613
<b>DOMAIN ADAPTION FOR FACIAL EXPRESSION RECOGNITION</b>	
JUNTONG LIU, FANYU WU, WENJIN LU, BAILING ZHANG .....	620
<b>MOTION CONTROL DESIGN FOR DYNAMIC SPHERICAL MOBILE ROBOT VIA FUZZY CONTROL APPROACH</b>	
WEI-FU KAO, CHUN-FEI HSU .....	626
<b>A ROBOT OBSTACLE AVOIDANCE METHOD USING MERGED CNN FRAMEWORK</b>	
NAI-HSIANG CHANG, YI-HSING CHIEN, HSIN-HAN CHIANG, WEI-YEN WANG, CHEN-CHIEN HSU.....	632
<b>CLASS SIZE VARIANCE MINIMIZATION TO METRIC LEARNING FOR DISH IDENTIFICATION</b>	
PATRICK P. K. CHAN, HAOQIN XIE, HONGBO YIN, XIAOPENG CHEN, DESHUN YANG.....	637

<b>PREDICTING GLOBAL COMPUTING POWER OF BLOCKCHAIN USING CRYPTOCURRENCY PRICES</b>	
GUANGCHENG LI, QINGLIN ZHAO, MENGFEI SONG, DAIDONG DU, JIANWEN YUAN, XUANHUI CHEN, HONG LIANG .....	643
<b>DATA-DRIVEN APPROACH FOR QUALITY EVALUATION ON KNOWLEDGE SHARING PLATFORM</b>	
LU XU, JINHAI XIANG, YATING WANG, FUCHUAN NI.....	649
<b>A CAR NAVIGATION MAP EQUIPPED WITH SPEED RECOMMENDATION</b>	
YUE XU, ZHIMIN HE, HAOZHEN SITU, JUNJIAN SU, YAN ZHOU.....	655