6th International Forum on Industrial Design (IFID 2018)

MATEC Web of Conferences Volume 176 (2018)

Luoyang, China 18 - 20 May 2018

Editors:

Changde Lu Xuesheng Pei Jianning Su

ISBN: 978-1-5108-6599-0

Printed from e-media with permission by:

Curran Associates, Inc. 57 Morehouse Lane Red Hook, NY 12571



Some format issues inherent in the e-media version may also appear in this print version.

This work is licensed under a Creative Commons Attribution license: http://creativecommons.org/licenses/by/2.0/

You are free to:

Share – copy and redistribute the material in any medium or format.

Adapt – remix, transform, and build upon the material for any purpose, even commercial.

The licensor cannot revoke these freedoms as long as you follow the license terms.

Under the following terms:

You must give appropriate credit, provide a link to the license, and indicate if changes were made. You may do so in any reasonable manner, but not in any way that suggests the licensor endorses you or your use. The copyright is retained by the corresponding authors.

Printed by Curran Associates, Inc. (2018)

For additional information, please contact EDP Sciences – Web of Conferences at the address below.

EDP Sciences – Web of Conferences 17, Avenue du Hoggar Parc d'Activité de Courtabœuf BP 112 F-91944 Les Ulis Cedex A France

Phone: +33 (0) 1 69 18 75 75 Fax: +33 (0) 1 69 28 84 91

contact-edps@webofconferences.org

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

Email: curran@proceedings.com Web: www.proceedings.com

TABLE OF CONTENTS

RESEARCH ON THE IMPROVEMENT OF SHARED MASSAGE CHAIR BASED ON USER JOURNEY MAP ^I	1
Qian JI, Jiayu ZHENG, Yu ZHANG	
ANALYSIS OF DIRECTION ON PRODUCT DESIGN IN THE ERA OF THE INTERNET OF	(
THINGS	ο
Tian Baozhen, Yu Suihuai, Chu Jianjie, Li Wenhua	
DESIGN OPTIMIZATION METHOD OF LINE-OF-SIGHT WITH JACK FOR BULLDOZER	10
OPERATOR	10
Mei-ni GUO	
DESIGN AND EVALUATION OF SILAGE EQUIPMENT CONTROL PANEL BASED ON THE	1.5
THEORY OF EMOTIONAL DESIGN AND KANSEI ENGINEERING	13
Yan Jie, Lv Bing, Wang Jianqiang, Duan Derong, Chen Mengjia, Li Zequn	
ECOLOGICAL OPTIMIZATION DESIGN OF SILAGE EQUIPMENT KEY COMPONENTS	20
BASED ON INNOVATION METHOD THEORY	20
RESEARCH AND EXPERIMENTAL APPLICATION OF FAMILY HOLOGRAPHIC	25
PROJECTION ENTERTAINMENT EQUIPMENT	23
Li Anzhuo, Li Fan, Ma Dayong	20
RESEARCH ON INDUSTRIAL DESIGN LABORATORY WITH SERVICE DESIGN CONCEPT Qiang WANG, Hai-chao ZHANG, Li WANG	28
RESEARCH ON THE PRACTICAL CROSS-CURRICULUM SYSTEM OF PRODUCT DESIGN	21
SPECIALTY FROM THE PERSPECTIVE OF NEW ENGINEERING	31
Li WANG, Hai-chao ZHANG STUDY ON HUMANIZED DESIGN OF INTELLIGENT CHARGING DEVICE FOR ELECTRIC	
BICYCLEBICYCLE DESIGN OF INTELLIGENT CHARGING DEVICE FOR ELECTRIC	25
	33
Yao Shan liang, Luo Man	
RESEARCH ON THE REPRESENTATION OF LINE-TYPE OF DIGITAL SKETCHING IN	20
PRODUCT DESIGN	39
Ying Liu, Xiaojing Liu, Yi Chen THE DESIGN AND RESEARCH OF THE SHARED KITCHEN SYSTEM IN THE HOSPITAL	42
	42
Xin YE, Qian JI DECEA DOLLON DA DA METEDIO ECODM DECICNI DA CED ONI NA TRIDA I DA TEEDNO	47
RESEARCH ON PARAMETRIC FORM DESIGN BASED ON NATURAL PATTERNS	47
RESEARCH AND APPLICATION OF RUBBER TREE QUANTITATIVE FERTILIZATION SYSTEM CONTROL BASED ON PLC	52
Wang Yeqin, Zhang Yuan, Deng Yiguo, Wei Lijiao, Liu Shengli	33
RESEARCH ON THE WASHING MACHINE DESIGN IMPROVEMENT OF SPECIFIC	
CONSUMPTION GROUPS	57
Wang Meina	
DESIGN AND IMPLEMENTATION OF TRAINING MANAGEMENT SOFTWARE FOR	
GENERAL SIMULATION TRAINING SYSTEM	61
Xiang Wei, Chunsheng Sun, Yanhong Dong	01
MODELING AND ANALYSIS OF MEDIUM SPEED MAGLEV VEHICLE NETWORK BASED	
ON CPN	61
Jiao Yibo, liu Xiangqian, Chen Xiaoyong	04
GENERALIZED LABELED MULTI-BERNOULLI EXTENDED TARGET TRACKING BASED	
ON GAUSSIAN PROCESS REGRESSION	60
Chi Luo-jia, Feng Xin-xi, Miao Lu	09
SUPER RESOLUTION DOA ESTIMATION WITH INCOMPLETE SINGLE SNAPSHOT DATA	
VIA MATRIX COMPLETION AND COMPRESS SENSING	7.1
Zhang Dong, Zhang Qin, Song Baojun, Zheng Guimei, Zhang Yongshun	/4
AN IMPROVED K-MEANS METHOD WITH DENSITY DISTRIBUTION ANALYSIS	70
Xue Huiwen, Li Haochen, Wang Yanfei	/8
REGIONAL LOAD BALANCING CIRCUITOUS BANDWIDTH ALLOCATION METHOD	
BASED ON DYNAMIC AUCTION MECHANISM	92
Chao Wang, Dalong Zhang, Xiaomin Ran	
Chao mang, Dutong Duting, Automin Kun	

DESIGN AND IMPLEMENTATION OF HD VIDEO ENCODING SYSTEM BASED ON HDMI	88
INTEGRATED DEVELOPMENT OF COMMUNICATION TECHNOLOGY AND COMPUTER	02
TECHNOLOGY	92
IMAGE RECOGNITION OF INDIVIDUAL COW BASED ON SIFT IN LAB COLOR SPACE	96
MEDICAL ANSWER SELECTION BASED ON TWO ATTENTION MECHANISMS WITH	
BIRNN	100
Ma Jiajia, Che Chao, Zhang Qiang	
RESEARCH ON EMBEDDED MULTI-TASK BALANCING SCHEDULING ALGORITHMZhuangzhi Han, Tianlin Ma	106
DDOS ATTACK DETECTION BASED ON SELF-ORGANIZING MAPPING NETWORK IN	
SOFTWARE DEFINED NETWORKING	110
Zhao Chanchan, Liu Feng	
A NOVEL ALGORITHM FOR RADAR TARGET FEATURE EXTRACTION	114
Limin Shen	
UNDERSTANDING OF THE COHERENT DEMODULATION WITH PHASE-LOCKED LOOP	117
Zhai Bingcong	
THE FAST RECOGNITION OF VEHICLE LICENSE PLATE BASED ON THE IMPROVED	
TEMPLATE MATCHING	122
Jiang Zhixin, Lin Zhengkui, Tang Jing, Li Hao, Menglu You	
EVALUATION MODEL FOR PROTOCOL CONFORMANCE OF BDS D1 NAVIGATION	
MESSAGES	127
Wang Menglan, Lv Zhicheng, Peng Jing, Mou Weihua, Ou Gang	
RECONSTRUCTION METHOD OF ELECTRICAL CAPACITANCE TOMOGRAPHY BASED	
ON WAVELET FUSION	131
Lei Zhou, Jiangbao Yan, Feng Zhu, Xiangyu Tan, Lifeng Zhang	
AN IMPROVED NORMALIZED MODEL OF ELECTRICAL CAPACITANCE TOMOGRAPHY	136
Jiangbao Yan, Lei Zhou, Feng Zhu, Tan Xiangyu, Changsheng Zhang	
THE RESEARCH OF REGRESSION MODEL IN MACHINE LEARNING FIELD	141
Rong Shen, Bao-wen Zhang	
APPLICATION OF EXTREME LEARNING MACHINE IN GPS POSITIONING PROCESS	145
Li Chengxin, Peng Jing, Zhicheng Lv, Wang Mengli, Ou Gang	
AN NOVEL IMAGE RECOGNITION METHOD BASED ON THREE-WAY DECISION	149
Dai Jin, Shao Shuai, Wang Zu, Zhao Xianjing	
BIPOLAR TRIANGULAR WAVE CURRENT PULSE INVERTER FOR SHALLOW TEM	
SURVEY	155
Yifu Zhao, Lihua Liu, Zhi Geng, Xiaojun Liu	133
RESEARCH ON BLOCK-BASED BLIND IDENTIFICATION OF HIGH-RATE PUNCTURED	
CONVOLUTIONAL CODES	150
Yan Hua, Huang Ying, Li Baoguo, Lei Jing	137
STUDY ON A QUANTITATIVE ANALYSIS METHOD FOR PULSE COMPRESSION RESULTS	164
Linzhi MA, Min Wang, Chenxiang WENG, Zhouyan SHI	104
RESEARCH ON TRACK DECEPTION TECHNOLOGY BASED ON JAMMING OF FLEXIBLE	
LINES BY JAMMERS.	169
Zhouyan SHI, Min WANG, Lu ZHANG, Linzhi MA	100
ANALYSIS OF RDSS POSITIONING PERFORMANCE UNDER ELEVATION CONSTRAINTS	173
Fan Yao, Liu Wenxiang, Xiao Wei, Sun Guangfu	173
AN IMPROVED METHOD OF MICROSCOPIC IMAGE SEGMENTATION	177
Feng Shou Zhang, Fang Dong, Jian Ting Liu, Xin Meng	1 / /
PREDICTION OF OPERATING ABNORMALITY RATE OF CHARGING PILE BASED ON	
GENERALIZED AR(Q) COMBINED REGRESSION	101
Xin Xu, Jun Fu, Zhijie Sun, Xuemei Li, Guopeng Zhou	181
RESEARCH PROGRESS AND APPLICATION OF COMPUTER ARTIFICIAL INTELLIGENCE	
	107
TECHNOLOGY	186
SIMPLE ANALYSIS ON THE CAUSE OF THE DEVELOPMENT OF FURNITURE DESIGNER'S BRAND INDUSTRY TAKE MORELESS AND OPAL FOR EXAMPLE	101
	191
Xingyin Liu, Wenying Dong	

THE RESEARCH AND DEVELOPMENT OF QUANZHOU CULTURAL AND CREATIVE	
PRODUCTS BASED ON "MARITIME SILK ROAD" CULTURE	195
Xing-he Wang	
RESEARCH ON INDUSTRIAL DESIGN TECHNOLOGY INNOVATION A CASE STUDY OF	
CERAMIC GLAZE	200
Haiyong Shen, Yanyan Dai, Jun Li	
THE DESIGN EDUCATION OF THE NEW ERA URGENT NEEDS TO CULTIVATE	
ENGINEERING ETHICS CONSCIOUSNESS	204
Wenming Liu	
ANALYSIS ON THE KEY POINTS OF INFLUENTIAL FACTORS IN PRODUCT	
MORPHOLOGICAL DESIGN	208
Guo Juanling, Meng Kaining, Meng Ying	
RESEARCH ON THE REFORM OF THE ABILITY-ORIENTED INNOVATION AND	
ENTREPRENEURSHIP EDUCATION SYSTEM FOR THE DESIGN MAJOR	211
Yan Dong	
STUDY ON PRACTICE TEACHING SYSTEM OF UNDERGRADUATE INDUSTRIAL DESIGN	
IN COMPREHENSIVE UNIVERSITY	215
Bai Shi, Sun Qiang	
MINIMIZED DESIGN FOR THE PACKAGING OF SHENYANG SPECIALTIES AGAINST THE	
INTERNET-BASED BACKGROUND	219
Meng YANG, Xiaohui ZHANG	
THE APPLICATION OF TRADITIONAL CULTURE IN INDUSTRIAL DESIGN IN NEW EPOCH	223
Shuang Wu	
PROBE INTO THE LONG-TERM MECHANISM OF "STUDIO MODEL" TEACHING	
INTERNAL QUALITY GUARANTEE	228
Zhang Yong, Shao Yingying, Yu Hongjie	
REINTERPRETING FORM BIONIC DESIGN AND ITS APPLICATION IN DESIGN	
INNOVATION WITH MULTIPLE METHODS	232
Yang Qiao	
RESEARCH ON THE ROLE OF DESIGN AESTHETICS IN MODERN DESIGNXS	236
Qu Yehua, Mao Xuanbo, Li Dian	230
RESEARCH ON INNOVATIVE APPLICATION OF SILVER MATERIAL IN MODERN	
JEWELRY DESIGN	241
Yu Qinqin, Meng Kaining, Guo Juanling	271
RESEARCH ON THE STRATEGY OF PRODUCT ECOLOGICAL STRUCTURE DESIGN	
UNDER GLOBAL OCEAN POLLUTION	245
Li Chun, Meng Kaining, Yu Qinqin	243
THE CHALLENGES AND TRANSFORMATION OF DESIGN EDUCATION IN	
CONTEMPORARY CHINA	249
Yu Peipei, Jerrard Bob	
DESIGN FACTORS EXTRACTION AND APPLICATION OF FIVE DYNASTIES YAOZHOU	
PORCELAIN DECORATIONPORCELAIN DECORATION	253
Song Qin, Yi Wang	233
THE COLOR APPLICATION OF THE REPRESENTATIVE POP ART IN MODERN DESIGN —	
ILLUSTRATED BY THE CASE OF MAOS DESIGN ^I	250
Oian JI, Jiayu ZHENG	236
OUTDOOR LIGHTING DESIGN TEACHING EXPLORATION WITH CREATIVE THINKING	
AS ITS CORE	262
Xiaoxi Liu, Yansong Chen, Xinyue Zhang	203
TEACHING RESEARCH ON THE MANUAL MODEL OF PRODUCT DESIGN	267
Ying Liu, Xiaojing Liu, Yi Chen	207
DISCUSS THE APPLICATION OF INNOVATIVE SERVICE THINKING IN THE DESIGN OF	270
QUALIA GOODSTAKE THE CASE OF THE ONE SOUTH GARDEN AS AN EXAMPLE	270
Bi Wei, Wu Ju, Lin Rungtai	275
EMERGING ROLES IN DESIGN EXPANSION: 'THE THIRD GROUP' INVOLVED IN DESIGN	215
Xiang Chen, Liu Wei	201
ANALYSIS AND APOCALYPSE OF JAPANESE STYLE CREATION AESTHETICS	281
Xin-qin Peng	
THE CONCEPT TRANSFORMATION OF DESIGN EDUCATION BASED ON	•0-
INTERNATIONALIZED TEACHING EXCHANGE	285
Jiao Xu, Ming a XU	

RESEARCH ON THE PRESENT CONDITION AND PRODUCT DESIGN OF SUILING BLACK	
POTTERY IN HEILONGJIANG PROVINCE	288
Xiaoqi Li, Aili Zhao, Mengshi Jia, Zhenxing Yan, Liangliang Yang, Weijie Wang	202
TOYS FEATURED IN TOOLS AND TOOLS FEATURED IN TOYS	293
Tian-cheng Zhang, Chun-yan Zhang	207
ONLINE LEARNING SPACE AND WISDOM TEACHING	297
EMPIRICAL RESEARCH ON INDUSTRIAL DESIGN CONTRIBUTION RATE UNDER	
STATISTICAL FRAMESTATISTICAL FRAME	300
Liu Xiaojing, Liu Ying, Xue Xinyuan	
ON THE RECONSTRUCTION OF ADVERTISING ETHICS IN THE NEW MEDIA ERA	304
Ming XU, Jiao Xu	
RESEARCH ON BASIC DATABASE FOR REAL PROPERTY UNIFIED REGISTRATION	307
Yang Guang, Yang Zhihan, Han Zhijie	
RESEARCH ON PUBLISHING CIM MODEL CHANGE EVENTS THROUGH OPC UA	311
Peng Zewu, Deng Churan, Wen Bojian, Xu Qingping	
WEB-BASED AGRICULTURAL TECHNOLOGY EVALUATION INFORMATION SYSTEM:	
DESIGN, APPLICATION AND EVALUATION	317
Ren Yanzhao, Wang Minjuan, Gao Wanlin, Hu Hui, Chen Xuerui	
AN EMPIRICAL STUDY ON FINANCING PREFERENCE OF LISTED MILITARY INDUSTRY	
ENTERPRISES IN CHINA	323
Chen Li-Na, Lei Ying	
KNOWLEDGE EVOLUTION OF COMPLEX AGENT NETWORKS	327
Yeqing Zhao	221
COMMUNITY MINING ALGORITHM BASED ON STRUCTURAL SIMILARITY	331
SALIENCY DETECTION WITH SPARSE PROTOTYPES: AN APPROACH BASED ON MULTI-	
DICTIONARY SPARSE ENCODING	227
Wang Jun, Wu Zemin, Tian Chang, Hu Lei	337
ADAPTIVE TARGET BIRTH INTENSITY FOR ET-PHD FILTER	341
Miao Lu, Feng Xin-xi, Chi Luo-jia	
STATISTICAL ANALYSIS OF CITY AND THE VILLAGES INTERNET USERS BASED ON	
USER LOGS	345
Yi-wen ZHANG, Yan-qi BAI, An-ju YANG	
OPTIMIZATION ACCELERATION INTEGRAL METHOD BASED ON POWER SPECTRUM	
ESTIMATION	348
Guo Ruijie, Ye Shengbo, Ji Yicai	
DESIGN AND IMPLEMENTATION OF SERVICE AND MANAGEMENT SYSTEM OF	
AGRICULTURAL TECHNICIANS	353
Lu Yang, Wang Furong, Luo Changshou, Yu Weishui, Yu Jun	
RESEARCH AND DESIGN OF CROSS-LANGUAGE VERTICAL SEARCH ENGINE FOR	255
SPECIAL AGRICULTURAL E-COMMERCE PLATFORM	35/
Cao Yaru, Ma Ning, Wan Fucheng, He Xiangzhen RESEARCH ON CROWDSOURCING CAMERA MODE SYSTEM BASED ON BLOCK CHAIN	
TECHNOLOGY	361
Hu Dou, Ma Chuang, Gao Yuanlong, Liu Wenlong	301
UPGRADING DEVELOPMENT AND APPLICATION OF AGRICULTURAL INFORMATION	
SERVICE SYSTEM BASED ON WECHAT PUBLIC PLATFORM——A CASE OF WECHAT	
PUBLIC PLATFORM OF 12396 BEIJING NEW RURAL SCI-TECH SERVICE HOTLINE	365
Yu WeiShui, Guo Qiang, Luo ChangShou, Zheng YaMing, Yang Lu, Wang FuRong	
BIG DATA IN MEDICAL RESEARCH AND APPLICATION	370
Yilin Teng, Gaofang Cao, Rui Wang	
RESEARCH ON THE APPLICATION OF COLOR SEMANTICS IN THE HUMAN-COMPUTER	
INTERACTION DESIGN OF SMARTPHONES	374
Xiaoxiao Bao, Wenming Liu	
RESEARCH ON THE IMPACT MECHANISM OF USER SATISFACTION WITH SOFTWARE	
AS A SERVICE	377
Li Shuwen	
USER ACCEPTANCE OF M-BANKING APPLICATION: INDONESIAN CASES	383
Yovita Arifiani, Ari Widyanti	
STUDY ON MAN-MACHINE DESIGN OF ARMOURED VEHICLES OPERATION SPACE	387
Hemin Du, Ting Wang	

DESIGN OF SERVICE FRAMEWORK BASED ON THE TRIP EXPERIENCE OF THE	
ELDERLY - TAKE THE CULTURAL AND HISTORICAL SCENIC SPOT AS AN EXAMPLE	392
Meng Ying, Meng Kaining, Liu Jiahao	
RESEARCH ON THE DEVELOPMENT LAW OF SMART PHONE SCREEN BASED ON USER	
EXPERIENCE	396
Xuesheng Pei, Yang Wang	
CONSTRUCTING A FRAMEWORK OF USER EXPERIENCE FOR MUSEUM BASED ON	
GAMIFICATION AND SERVICE DESIGN	401
Liu Shunli, Zaffwan Idris Muhammad	
RESEARCH ON FORM DESIGN OF NEW GENERATION UPGRADE PRODUCTS BASED ON	
BRAND IDENTITY	406
Su JN, Lv Y, Wang P, Bai RS	
FBS FRAMEWORK APPLICATION BASED ON USER REQUIREMENT ANALYSIS	413
Qing ZHANG, Deng-kai CHEN	
Author Index	