

2020 International Conference on Advanced Robotics and Intelligent Systems (ARIS 2020)

**Taipei, Taiwan
19 – 21 August 2020**



**IEEE Catalog Number: CFP20ARI-POD
ISBN: 978-1-7281-9824-8**

**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:	CFP20ARI-POD
ISBN (Print-On-Demand):	978-1-7281-9824-8
ISBN (Online):	978-1-7281-9823-1
ISSN:	2374-3255

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

ESTIMATION OF PHOTOSYNTHETIC GROWTH SIGNATURE AT THE CANOPY SCALE USING NEW GENETIC ALGORITHM-MODIFIED VISIBLE BAND TRIANGULAR GREENNESS INDEX	1
<i>Ronnie S. Concepcion; Sandy C. Lauguico; Rogelio Ruzcko Tobias; Elmer P. Dadios; Argel A. Bandala; Edwin Sybingco</i>	
ARTIFICIAL INTELLIGENCE AND INTERNET OF THINGS FOR ROBOTIC DISASTER RESPONSE	7
<i>Min-Fan Ricky Lee; Tzu-Wei Chien</i>	
LANDING AREA RECOGNITION USING DEEP LEARNING FOR UNAMMANED AERIAL VEHICLES.....	13
<i>Min-Fan Ricky Lee; Asep Nugroho; Tuan-Tang Le; Bahrudin; Saul Nieto Bastida</i>	
MODEL PREDICTIVE CONTROL WITH LAGUERRE FUNCTION BASED ON SOCIAL SKI DRIVER ALGORITHM FOR AUTONOMOUS VEHICLE	19
<i>M. Elsis</i>	
PATH FOLLOWING FOR AUTONOMOUS TRACTOR UNDER VARIOUS SOIL CONDITIONS AND UNSTABLE LATERAL DYNAMIC.....	25
<i>Min-Fan Ricky Lee; Asep Nugroho; Widagdo Purbowaskito; Saul Nieto Bastida; Bahrudin</i>	
INTELLIGENT ROBOT FOR WORKER SAFETY SURVEILLANCE: DEEP LEARNING PERCEPTION AND VISUAL NAVIGATION.....	31
<i>Min-Fan Ricky Lee; Tzu-Wei Chien</i>	
SIMULATION AND CONTROL OF A ROBOTIC ARM USING MATLAB, SIMULINK AND TWINCAT.....	37
<i>Wei-Chen Lee; Shih-An Kuo</i>	
FORMATION CONTROL FOR MOBILE ROBOT USING FUZZY - PI CONTROLLER	42
<i>Min-Fan Ricky Lee; H. P. M. Willybrordus; Sukanto; Sharfiden Hassen; Asep Nugroho</i>	
AUTONOMOUS POSE CORRECTION AND LANDING SYSTEM FOR UNMANNED AERIAL VEHICLES.....	48
<i>Min-Fan Ricky Lee; Saurav K.; Aayush Jain</i>	
ONE-STAGE VEHICLE ENGINE NUMBER RECOGNITION SYSTEM	54
<i>Cheng-Hsiung Yang; Han-Shen Feng</i>	
CAD-BASED OFFLINE PROGRAMMING PLATFORM FOR WELDING APPLICATIONS USING 6-DOF AND 2-DOF ROBOTS	58
<i>Amit Kumar Bedaka; Chyi-Yeu Lin</i>	
A HYBRID NETWORK FOR FACIAL AGE PROGRESSION AND REGRESSION LEARNING	62
<i>Rui-Cang Xie; Gee-Sern Jison Hsu</i>	
OBJECT DETECTION USING TRANSFER LEARNING FOR UNDERWATER ROBOT	68
<i>Chia-Chin Wang; Hooman Samani</i>	
A NOVEL ROBOTIC GRASP DETECTION TECHNIQUE BY INTEGRATING YOLO AND GRASP DETECTION DEEP NEURAL NETWORKS.....	72
<i>Jin-Yi Yang; Ui-Kai Chen; Kai-Chu Chang; Ying-Jen Chen</i>	
LANDING SITE INSPECTION AND AUTONOMOUS POSE CORRECTION FOR UNMANNED AERIAL VEHICLES	76
<i>Min-Fan Ricky Lee; Aayush Jain; Saurav K.; D. A. Anshuman</i>	
IMPLEMENTATION OF THE CAMERA-BASED APPROACH TO GUIDE THE ROBOT WITH MINIMIZATION MOVEMENTS.....	82
<i>Hsin-Hsiung Huang; Juing-Huei Su; Chyi-Shyong Lee; Hsuan-Hao Li</i>	
SKELETON-BASED HAND GESTURE RECOGNITION FOR ASSEMBLY LINE OPERATION.....	88
<i>Chao-Lung Yang; Wen-Ting Li; Shang-Che Hsu</i>	
MULTI-MODEL FUSION ON REAL-TIME DROWSINESS DETECTION FOR TELEMETRIC ROBOTICS TRACKING APPLICATIONS.....	94
<i>Ren C. Luo; Chin Hao Hsu; Yu-Cheng Wen</i>	
SLAM CONFIGURATION FROM VIDEO IMAGES FOR REMOTE OMNI-DIRECTION VEHICLE PLATFORM	100
<i>P. I. Chang; Y. S. Shi; S. C. Fan-Chiang; C. Y. Lan</i>	

DEVELOPMENT AND IMPLEMENTATION OF NOVEL SIX-SIDED AUTOMATED OPTICAL INSPECTION FOR METALLIC OBJECTS.....	104
<i>Fauzy Satrio Wibowo; Yuda Risma Wahyudi; Hsien-I Lin</i>	
A PARADIGM OF AUTOMATIC ICT TESTING SYSTEM DEVELOPMENT IN PRACTICE	110
<i>Shuhao Liang</i>	
SYNCHRONOUS DUAL-ARM MANIPULATION BY ADULT-SIZED HUMANOID ROBOT	116
<i>Hanjaya Mandala; Saeed Saeedvand; Jacky Baltes</i>	
DESIGN OF CONTINUOUS-TIME SIGMA-DELTA MODULATOR WITH NOISE REDUCTION FOR ROBOTIC LIGHT COMMUNICATION AND SENSING	122
<i>Wen-Cheng Lai</i>	
DESIGN OF 1V CMOS 5.8 GHZ VCO WITH SWITCHED CAPACITOR ARRAY TUNING FOR INTELLIGENT SENSOR FUSION.....	127
<i>Wen-Cheng Lai</i>	
HARDWARE ACCELERATED INVERSE KINEMATICS FOR LOW POWER SURGICAL MANIPULATORS.....	131
<i>Oleksii Tkachenko; Kai-Tai Song</i>	
AN AUTOMATED BIOMETRIC IDENTIFICATION SYSTEM USING CNN-BASED PALM VEIN RECOGNITION.....	137
<i>Sin-Ye Zhong; Po-Yen Tseng; Natnuntnita Siriphockpirom; Chih-Hsien Hsia; Ming-Shih Huang; Kai-Lung Hua; Yung-Yao Chen</i>	
Author Index	