# 2019 Tenth International Conference on Intelligent Control and Information Processing (ICICIP 2019)

Marrakesh, Morocco 14 – 19 December 2019



**IEEE Catalog Number: ISBN:** 

CFP1989J-POD 978-1-7281-0016-6

# 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:
 CFP1989J-POD

 ISBN (Print-On-Demand):
 978-1-7281-0016-6

 ISBN (Online):
 978-1-7281-0015-9

#### **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



## December 14

14:00-	Pogistration (Johby)
18:00	Registration (lobby)

### December 15

8:30- 8:40	Opening ceremony (Marrakech Meeting Room)			
8:40- 9:40	Keynote speech I		Professor Guanrong Chen	
9:40- 10:00	Coffee break			
10:00- 11:00	Keynote Speech II		Professor Qing-Long Han	
11:00- 12:00	Keynote Speech III		Professor Gary G. Yen	
12:00- 13:00		Lunch (P	anoramique)	
Ses- sion	Oral session 1: Intelligent Information Processing I (Marrakech Meeting Room)			
Chairs	Shu	ang Cong	and Jianchao Fan	
13:00- 13:20	Yingying Kong, Bowen Zha Henry Leung and Shiyu Xii	•	Urban UAV Images Semantic Segmentation Based on Fully Convolutional Networks with Digital Surface Models	1
13:20- 13:40	Kun Zhang, Shuang Cong, Ding, Jiaojiao Zhang and k		Efficient and Fast Optimization Algorithms for Quantum State Filtering and Estimation	7
13:40- 14:00	Huiyan Lu, Ruiqi Liu, Xiuju Haiqi Liu, Mei Liu, Long Jir liang Zhang		On RNN Models for Solving Dynamic System of Linear Equations	20
14:00- 14:20	Huan Wang, Dongyang Fu Liao, Guancheng Wang an Xiuchun Xiao		Significant Wave Height Prediction  Based on MSFD Neural Network	39
14:20- 14:40	Xiang Wang, Xin-Xin Wang Jianchao Fan, Lin Wang at Hui Meng		Spectral Analysis Based Green Tide Identification in High-suspended Sediment Wasters in South Yellow Sea of China	70
14:40- 15:00	Xinxin Wang, Xiang Wang, Jianchao Fan, Jianhua Zha Wang and Enbo Wei		Automatic Detection and Identification of RFI Sources for SMAP Satellite Po- larized Data Based on IDL	76
15:00- 15:20	Yangyang Qian, Mingang I Juntao Fei	Hua and	Fault Detection Filtering for Nonlinear Systems with Packet Dropout	87
15:20-	Xiangguang Dai, Keke Zha	ıng, Wei	Sparse Coding with Outliers	246

15:40	Zhang, Jiang Xiong and Yuming Feng		
15:40- 16:00	Coffee break		
Ses-	Oral session 2: Intellige	nt Information Processing II	
sion	(Marrakech	Meeting Room)	
Chairs	Zhi-Hui Zhan	and Nian Zhang	
16:00-	Yue-Xin Li, Zhi-Hui Zhan, Hu Jin	Cloudde-based Distributed Differential	
16:20	and Jun Zhang	Evolution for Solving Dynamic Optimi-	94
10.20	and Jun Zhang	zation Problems	
16:20-	Jianchao Fan, Xinxin Wang, Xiang	GF-3 PolSAR Marine Aquaculture	
16:40	Wang and Xiaoxin Liu	Recognition Based on Complex Convo-	112
10.40		<u>lutional Neural Networks</u>	
	Juan F. Ramirez Rochac, Lily Liang, Nian Zhang and Timothy Oladunni	A Gaussian Data Augmentation Tech-	
16:40-		nique on Highly Dimensional, Limited	145
17:00		Labeled Data for Multiclass Classifica-	
		tion Using Deep Learning	
17:00-	Thouga Christina da Silva and Mar	Automatic Identification and Prediction	
17:00-	Thayse Christine da Silva and Marcelo Ricardo Stemmer	of Anatomical Points in Monocular Im-	198
17.20		ages for Postural Assessment	
17:20-	Min Woo Kim Kuung Too Kim and	Node Clustering Based on Feature	
	Min Woo Kim, Kyung Tae Kim and	Correlation and Maximum Entropy for	184
17:40	Hee Yong Youn	WSN	
17:40-	Youcef Moudjib Houari, Haibin	Cross Spectral-Spatial Convolutional	
	Duan, Baochang Zhang and Ali Ma-	Network for Hyperspectral Image Clas-	221
18:00	her	sification	
18:30-	Dominat		
20:00	Ba	anquet	

# December 16

Ses-	Oral session 3: Intelligent Information Processing III		
sion	(Marrakech Meeting Room)		
Chairs	Ping Guo a	nd Qiu-Hua Lin	
	V W-i Ni. Oir H Lin Li D	Sample Augmentation for Classification	
8:00-	Yan-Wei Niu, Qiu-Hua Lin, Li-Dan	of Schizophrenia Patients and Healthy	297
8:20	Kuang, Yue Qiu and Vince D Cal-	Controls Using ICA of fMRI Data and	297
	houn	Convolutional Neural Networks	
8:20-	Wanliang Wang, Zheng Wang,	An Improved Multi-Objective Optimiza-	
8:40	Guoqing Li and Senliang Ying	tion Algorithm Based on Decomposition	327
8:40- 9:00	Juan E. Damiroz Dachas, Nian	A Spectral Feature Based CNN Long	
	Juan F. Ramirez Rochac, Nian	Short-Term Memory Approach for Clas-	316
	Zhang and Jiang Xiong	sification	

9:00- 9:20	Ningning Zhou, Yang Liu and Long Hong	An Improved SLIC Super-pixel Extraction Algorithm Based on MMTD	233
9:20- 9:40	Rong Fu, Tongtong Wu, Zuoying Luo, Fuqing Duan, Xuejun Qiao and Ping Guo	Learning Behavior Analysis in Class- room Based on Deep Learning	206
9:40- 10:00	Leisi Shi, Chen Li and Lihua Tian	Music Genre Classification Based on Chroma Features and Deep Learning	81
10:00- 10:20	Coffe	ee break	
Ses-	Oral session 4:	Intelligent Control I	
sion	(Marrakech	Meeting Room)	
Chairs	Long Chen	g and Bo Zhao	
10:20- 10:40	Haowei Lin, Qiuye Wu, Derong Liu, Bo Zhao and Qinmin Yang	Fault Tolerant Control for Nonlinear Systems Based on Adaptive Dynamic Programming with Particle Swarm Optimization	322
10:40- 11:00	Jintao Gong, Guang Chen, Hong- Xiang Hu and Wenwu Yu	Parameters Identification and Synchro- nization of Complex Dynamical Net- works with Time-varying Delays via Lin- ear Control	250
11:00- 11:20	Jun Ma, Rong Mo, Miao Chen, Long Cheng and Hongsheng Qi	Mirror-Training of a Cable-Driven Hand Rehabilitation Robot Based on Surface Electromyography (sEMG)	309
11:20- 11:40	Zhenxing Li, Chengdong Yang, Zhaodong Liu, Ancai Zhang and Jianlong Qiu	Fully Distributed Consensus Control for Second-order Uncertain Nonlinear  Multi-Agent Systems via an Event-triggered Approach	258
11:40- 12:00	Yao Hu, Ming Yang, Bing Wang, Chunxiang Wang and Boya Xu	Autonomous Exploration for Automated Valet Parking Based on Road Structure	282
12:00- 13:00	Lunch (P	Panoramique)	
Ses- sion	Oral session 5: Intelligent Control II  (Marrakech Meeting Room)		
Chairs	Wen Yu and Tieshan Li		
13:00- 13:20	Shunyuan Xiao, Xiaohua Ge, Qing- Long Han and Zhenwei Cao	Two-Target Tracking Over Heterogenous Sensor Networks under Deception Attacks	303
13:20- 13:40	Liangen Yuan, Tieshan Li, C. L. Philip Chen, Qihe Shan and Min Han	Broad Learning System-Based Learning Controller for Course Control of Marine Vessels	133
13:40- 14:00	Yuanyuan Xu, Tieshan Li, Qihe Shan and Min Han	Adaptive Fuzzy Compensation Control of MIMO Stochastic Nonlinear Systems with Input Hysteresis	26

14:00- 14:20	Wenhui Duan, Xiuchun Xiao, Dong- yang Fu, Mei Liu, Jiliang Zhang, Shi Yan and Long Jin	A Controller of Liquid Material on Fast Saturated Zeroing Dynamics Model in Industrial Agitator Tank	33
14:20- 14:40	Adolfo Perrusquia, Wen Yu and Xiaoou Li	Impedance Control of Robot in Un- known Environment Using Reinforce- ment Learning	59
14:40- 15:00	Erick García, Wen Yu and Xiaoou Li	Optimal Design of a Parallel Robot Us- ing Neural Network and Genetic Algo- rithm	64
15:00- 15:20	Lei Wang, Chuan Wang, Kun Wang, He Wang, Zhaoyu Liu and Wenwu Yu	Distributed Load Frequency Control for Multi-Area Power Systems	100
15:20- 15:40	Zhongbo Sun, Xiaoqin Duan, Feng Li, Yongbai Liu, Gang Wang, Tian Shi and Keping Liu	A RBF Neural Network-Sliding Model Control Approach for Lower Limb Rehabilitation Robot Based on Gait Trajectories of sEMG Estimation	14
15:40- 16:00	Coffee break		
Ses- sion Chairs	(Marrakech	Intelligent Control III Meeting Room) and Randa Herzallah	
16:00- 16:20	Yinfeng Gao, Yuqi Liu, Qichao Zhang, Yu Wang, Dongbin Zhao, Dawei Ding, Zhonghua Pang and Yueming Zhang	Comparison of Control Methods Based on Imitation Learning for Autonomous Driving	274
16:20- 16:40	Peng Xu, Guangming Xie, Jin Tao and Minyi Xu	Observer-based Event-triggered Circle Formation for Multi-agent Systems with Directed Topologies	239
16:40- 17:00	Ana Zafar and Randa Herzallah	Generalised Fully Probabilistic Control- ler Design for Nonlinear Affine Systems	137
17:00- 17:20	Randa Herzallah	Robust Probabilistic Control for Linear Stochastic Systems with Functional Uncertainty	169
17:20- 17:40	Yong Lu, Pengcheng Cao, Lijun Xiong and Bocheng Xu	A Novel Fuzzy Logic Control on the  FVVT Lift of Internal Combustion Engine	126
17:40- 18:00	Sifan Yang, Guangming Xie, Jiayan Wen, Wenguang Luo, Zonghong	Distributed Event-Triggered Bipartite Consensus for Multi-Agent Systems	268

### December 17

December 17			
	Interactive Sessions		
	Fei Wang, Zichen Wang, Fei Yan,	A Novel Real-time Semantic-Assisted	44
	Hong Gu and Yan Zhuang	<u>Lidar Odometry and Mapping System</u>	
	Amauri B. Camargo Jr., Yisha Liu,	Mobile Robot Autonomous Exploration	
	Guojian He and Yan Zhuang	and Navigation in Large-scale Indoor	106
	Guojian rie and ran Zhuang	<u>Environments</u>	
	Jing Huang, Shuguo Yang and	A Method for Content-Based Image	
	Wenwu Wang	Retrieval with a Two-Stage Feature	213
	Wellwu Walig	Matching	
	ligger Wang Jun Wang and Wai	Design and Analysis of Neural Net-	
	Jiasen Wang, Jun Wang and Wei	works Based on Linearly Translated	289
	Zhang	<u>Features</u>	
	Wei Zeng, Zhiyuan You, Mingyue	CtI Cht D-ft D-tti DI	
	Huang, Zelong Kong, Yikuan Yu	Steel Sheet Defect Detection Based on	152
	and Xinyi Le	Deep Learning Method	
	Guojing Wu, Jingchuan Wang,	A	
	Hesheng Wang, Peng Li, and Le	An Improved Scan Matching Method	51
	Xie	based on Laser Reflection Intensity	
	Haibo Xie, Yang Song, Zongyao	Ship-induced Wave Numerical Simula-	
	Xue, Chengyong Yan, Shibo Zhou	tion in Head-on Situation of Two Ships	116
	and Zehua Li	in Shallow Water	
9:00-	Feng Jiang and Jiawei Yang	Ultra-Short-Term Wind Power Predic-	
17:00		tion Based on Ensemble Learning and	164
		Elephant Herd Optimization Algorithm	
	7   1   1   0   1	A Hybird Self-Learning Method Based	
	Zhenlun Yang, Kunquan Shi, Angus	on Particle Swarm Optimization and	334
	Wu, Meiling Qiu and Xuewen Wei	SALP Swarm Algorithm	
	Chengyong Yan, Wenjun Zhang	Comprehensive Evaluation of Ship Ma-	400
	and Shibo Zhou	neuverability Based on Cluster Analysis	122
		An Image Compression Framework	
	Zhenbing Liu, Xinlong Li, Weiwei Li,	Based on Multi-scale Convolutional	
	Rushi Lan, and Xiaonan Luo	Neural Network for Deformation Im-	174
		ages	
	Simi Lu, Xiaofeng Liao, Nankun	Reversible Data Hiding Based on Im-	050
	Mu, Jiahui Wu and Junqing Le	proved Rhombus Prediction Method	350
	Zimin Wang, Yumeng Wang,		
	Yuhong Meng, Li Zeng, Zhenbing	Shapelet Feature Learning Method of	226
	Liu and Rushi Lan	BCG Signal Based on ESOINN	
	Zhouhua Peng, Bao Zhang, Qiuyue	Finite-set Model Predictive Speed and	
	Sun, Dan Wang, Min Han, Lu Liu	Heading Control of Autonomous Sur-	158
	and Haoliang Wang	face Vehicles with Unmeasured States	
			180
	Yutong Wang, Yikun Wang, Li Yao	Single Channel Sleep Staging Based	180

	and Xiaojie Zhao	on Unsupervised Feature Learning	
	Via IIa I and I land and Custing	The Establishment of Chinese Charac-	
	Xia He, Long Hong and Guoping Du	ter Reference Frame of English Mon-	264
	Du	<u>ophthong</u>	
	Wentao Fu, Longfei Xue, Yuanfa Ji and Xiyan Sun	Implementation of Carrier Phase Syn-	
		chronization Technology in Pseudo	345
		Satellite Transmitter	
	Fang Lin, Zhelong Wang, Debin	Intelligent Flame Detection Based on	
	Shen, Kaida Li, Hongyu Zhao, Sen	Principal Component Analysis and	339
	Qiu and Fang Xu	Support Vector Machine	
		Exploiting the Relationship between	
	Tao Wang	Online and Spatial Collaboration Net-	192
		works for Online Mass Collaboration	