2016 IEEE 13th International Conference on Networking, Sensing, and Control (ICNSC 2016)

Mexico City, Mexico 28 – 30 April 2016



IEEE Catalog Number:

CFP16NSC-POD 978-1-4673-9976-0

ISBN:

Copyright © 2016 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 publication is a representation of what appears in the IEEE Digital Libraries. Some format issues inherent in the e-media version may also appear in this print version.

 IEEE Catalog Number:
 CFP16NSC-POD

 ISBN (Print-On-Demand):
 978-1-4673-9976-0

 ISBN (Online):
 978-1-4673-9975-3

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



TECHNICAL PROGRAM OF ICNSC 2016

Thursday April 28, 2016

TO D	0 1		T)	Co	•
ThP.	Sal	on	P01	'tu	rin

Plenary Talk: Ljiljana Trajkovic Mining Network Traffic Data

Chair: Xiaou Li 9:00-10:00

ThA1, Salon Michoano

Intelligent Systems for Control and Healthcare Applications

Chairs: Yo-Ping Huang / Tsu-Tian Lee

No.	Time	Paper	Page
ThA1.1	10:30-10:50	Design of a fault-tolerant middleware for metadata management	1
		Ricardo Adán Madrid Trejo, Ricardo Marcelín Jiménez and Orlando Muñoz Texzocotetla	
ThA1.2	10:50-11:10	Detecting Falls with Low-end Smartphones Shang-Lin Hsieh and Cheng-Ta Yang	6
ThA1.3	11:10-11:30	Line Detecting and Tracking of a Mobile Robot with Multiple RGB-D Cameras	11
ThA1.4	11:30-11:50	Cheng-Ming Huang and Ting-Yi Yang Distance Weighted Fuzzy k-NN SVM Yi-Wen Cheng, Te-Jen Wen, Hui-Chuan Cheng and Chan-Yun Yang	15
ThA1.5	11:50-12:10	A platform for fusing psychological and physiological data from hybrid cloud	21
ThA1.6	12:10-12:30	Feng-Ming Sue, Yue-Shan Chang and Ruey-Kai Sheu Intuitive IoT-based H2U Healthcare System for Elderly Papelo	27
		People Haobijam Basanta, Yo-Ping Huang and Tsu-Tian Lee	

ThA2, Salon Colonial

Management and workflow

Chairs: Naqi Wu / Jiachun Wang

No.	Time	Paper	Page
ThA2.1	10:30-10:50	Resource Requirement Analysis for Cyclic Workflows Xiaoou Li, Gaiyun Liu, Jun Wang and Jiacun Wang	33
ThA2.2	10:50-11:10	Scheduling Crude Oil Operations in Refineries with Genetic Algorithm Yan Hou, Naiqi Wu and Mengchu Zhou	39
ThA2.3	11:10-11:30	Predictive model to determine quality of service on cloud computing: Service Dependence Graph SDG Aldo Benhumea-Peña, Carlos González-Morán, Leticia Davila-Nicanor and Giner Alor	45

ThB1, Salon Michoano

Sensor Networks

Chairs: Jian Wang / Victria Serrano

No.	Time	Paper	Page
ThB1.1	14:00-14:20	Towards Better Selective Forwarding And Delay Attacks	68
		Detection in Wireless Sensor Networks	
		Martin Stehlik, Vashek Matyas and Andriy Stetsko	
ThB1.2	14:20-14:40	Event Source Identification and Strength Estimation in	74
		Wireless Sensor Networks	
		Jian Wang, Xiumei Wu, Xiaoming Hu and Xiaolin Xu	
ThB1.3	14:40-15:00	Estimation of Road Surface Height for Preview System using	79
		Ultrasonic Sensor	
		Min-Hyun Kim and Seibum Choi	
ThB1.4	15:00-15:20	A Distributed Sequential Fusion Algorithm over	83
		Asynchronous Sensor Networks	
		Tianpeng Chu, Yinya Li, Guoqing Qi and Andong Sheng	
ThB1.5	15:20-15:40	Sensing, Calculating, and Disseminating Evacuating Routes	88
		during an Indoor Fire using a Sensor and Diffusion Network	
		Jingya Liu, Roberto Rojas-Cessa and Ziqian Dong	
ThB1.6	15:40-16:00	Secure Data Aggregation with Homomorphic Primitives in	94
		Wireless Sensor Networks: A Critical Survey and Open	
		Research Issues	
		Haythem Hayouni and Mohamed Hamdi	

ThB2, Salon Colonial

Identification Methods

Chairs: Z. Lukszo / Marco Angel

No.	Time	Paper	Page
ThB2.1	14:00-14:20	Frequency Response Function Modeling of Nonlinear Convergent Systems Suresh Thenozhi and Yu Tang	100
ThB2.2	14:20-14:40	Fuzzy Reference Model for Adaptive Indirect Takagi-Sugeno Model Reference Control Sanaz Tahmasebi, Mojtaba Ahmadieh Khanesar and Mohammad Teshnehlab	106
ThB2.3	14:40-15:00	Optimization Model for a Microgrid with Fuel Cell Vehicles <i>Kazuhiko Shinoda, Esther Park Lee, Masaru Nakano and Zofia Lukszo</i>	112

ThB2.4	15:00-15:20	Fuzzy Output Feedback Control via Sliding Mode Observer Wen Yu and Xiaoou Li	118
ThB2.5	15:20-15:40	3D Fractal Hurst exponential estimation for acoustic wave Julio César Tovar, Ricardo Carreño, Miguel Patino, Marco Antonio Acevedo, Julian Patino and Alexander Balankin	124
ThB2.6	15:40-16:00	Improved Chemical Reaction Optimization Algorithm for 3D Complex Surface Coverage Ruijun Yang, Yaofeng Fan, Nan Zhao and Yan Cheng	131
ThB2.7	16:00-16:20	The Dynamic Modeling Based on Fuzzy Neural Network for a Billiard Robot Jiaying Gao, Qiuyang He, Hong Gao and Zhixin Zhan	137
ThB2.8	16:20-16:40	A study on the on-line system identification and PID tuning of a buck converter Victoria Serrano and Konstantinos Tsakalis	141

Friday April 29, 2016

FrP, Salon Porfirio

Plenary Talk: Philip Chen

Deep Learning for Pattern Learning and Recognition

Chair: Mengchu Zhou

9:00-10:00

FrA1, Salon Michoano

Advanced Control

Chairs: Remberto Machuca / Kuo-Ho Su

No.	Time	Paper	Page
FrA1.1	10:30-10:50	Intelligent and Adaptive Temperature Control for Large-	146
		Scale Buildings and Homes	
		Yuan Wang and Partha Dasgupta	
FrA1.2	10:50-11:10	Control of Bilateral Teleoperators Using Only Position	152
		Measurements	
		Remberto Machuca, Carlos Aldana, Carlos Lopez-Franco and Emmanuel Nuno	
FrA1.3	11:10-11:30	Bidirectional Front-end for Piezoelectric Resonator Luca Marchetti, Mehdi Azadmehr, Yngvar Berg and Omid Mirmotahari	157
FrA1.4	11:30-11:50	Supervisory Fuzzy Model Control for Magnetic Levitation	161
		System	101
		Kuo-Ho Su and Chun-Yi Li	
FrA1.5	11:50-12:10	Identification of Incommensurate State-Space Fractional	167
		Systems	
		Marcos Ángel González Olvera and Yu Tang	
FrA1.6	12:10-12:30	Design and Simulation of Position Tracking Servo System for AFPMM	171
		Di He, Zhengfeng Ming and Jintao Liang	

FrA2, Salon Colonial

Petri Nets

Chairs: Guanjun Liu / David Lopez

No.	Time	Paper	Page
FrA2.1	10:30-10:50	Faster Parking and Less Cruise for Public Parking Spot Discovery: Modeling and Analysis based on Timed Petri Nets Xiaolu Zhang, Demin Li, Jiacun Wang and Guanglin Zhang	176
FrA2.2	10:50-11:10	Petri net based model checking for the collaborative-ness of multiple processes systems Guanjun Liu and Changjun Jiang	182
FrA2.3	11:10-11:30	Deadlock Control of Multithreaded Software Based on Petri Nets: A Brief Review Mengdi Gan, Shouguang Wang, Zhijun Ding, Wenhui Wu and Mengchu Zhou	188
FrA2.4	11:30-11:50	Lean Reachability Tree for Petri Net Analysis Jun Li, Xiaolong Yu and Mengchu Zhou	193
FrA2.5	11:50-12:10	Partitioning of Complex Networks for Heterogeneous Computing: a Methodological Approach Alberto Garcia-Robledo, Arturo Diaz-Perez and Guillermo Morales- Luna	199
FrA2.6	12:10-12:30	Transport network models for routing algorithms David López and Angélica Lozano	205

FrB1, Salon Michoano

Big Data Analytics for Smart Environments

Chairs: Ni-Bin Zhang / Wei Ding

Page
211
217
223
229
235
239

FrB2, Salon Colonial

Robotics

Chairs: Chenjun Liu/

No.	Time	Paper	Page
FrB2.1	14:00-14:20	Teleoperation of Mobile Manipulators with Non-Holonomic	245
		Restrictions	
		Tonatiuh Hernandez, Emmanuel Nuno and Alma Alani	
FrB2.2	14:20-14:40	Self-balanced Motion Planning for Humanoid Robot based on	251
		Dynamic Multitasking Mechanism	
		Jing Ning, Chengju Liu and Qijun Chen	
FrB2.3	14:40-15:00	Stability analysis of wireless networked control with time-	257
		varying sampling period	
E.D2.4	15.00 15.20	Xiaoou Li and Wen Yu	0(1
FrB2.4	15:00-15:20	Robot Foot Trajectory Tracking Motion Control Using	261
		Kinect Wen-Shyong Yu and Chun-Fu Yeh	
FrB2.5	15:20 15:40	Novel Intelligent Control Method for Improving the Fatigue	266
1102.3	13.20-13.40	Life of Crane boom	200
		Hamid Roozbahani, Sasu Mäkinen, Vinicius Pandolfo and Heikki	
		Handroos	
FrB2.6	15:40-16:00	Practical Mobile Robot Traveling Simulator Using Optical	274
		Mice	
		Sungbok Kim	
FrB2.7	16:00-16:20	A Trajectory Generation Method for Biped Walking Based	280
		on Neural Oscillators	
		Chengju Liu and Qijun Chen	
FrB2.8	16.20-16:40	A Measurement Approach for Average Start-up Torque of	286
		Vertical Axis Wind Turbines	
		Lei Song, Zong-Xiao Yang and Chao Ma	

Saturday April 30, 2016

SaA1, Salon Michoano

Data Mining

Chairs: Xiaoyan Zhu / Cui Yu

No.	Time	Paper	Page
SaA1.1	9:00-9:20	A Chinese Text Paraphrase Detection Method Based on	291
		Dependency Tree	
		Yipeng Jiang, Yu Hao and Xiaoyan Zhu	
SaA1.2	9:20-9:40	Efficient and Optimal Scheduling of Time-constrained	296
		Hybrid Multi-cluster Tools in Semiconductor Industry	
		Fajun Yang, Naiqi Wu, Yan Qiao and Mengchu Zhou	
SaA1.3	9:40-10:00	Understanding Blog Author's Emotions with Hierarchical	302
		Bayesian Models	
		Kang Xin and Fuji Ren	

			-
SaA1.4	10:00-10:20	Plant Identification using New Geometric Features with	308
		Standard Data Mining Methods	
		Rafael Rojas-Hernández, Asdrúbal López-Chau, Valentín Trujillo-	
		Mora and Carlos A. Rojas-Hernández	
SaA1.5	10:20-10:40	Neighboring Zipcodes with a new distance mapping method	312
		for better accuracy	
		Jordan Apgar and Cui Yu	
SaA1.6	10:40-11:00	A New Fast Reduction Algorithm for Binary Knapsack	318
		Problem	
		Xiaohua Xiong and Aibing Ning	

SaA2, Salon Colonial

Network and Communication

Chairs: Yanpin Ren / Malik Laudini

No.	Time	Paper	Page
SaA2.1	9:00-9:20	Communication delay guarantee for IEEE 802.11p/wave	324
		Vehicle networks with RSU control	
		Bassam A Zafar, Sofiane Ouni, Narjes Boulila and Leila Saidane	
SaA2.2	9:20-9:40	A Pulse Measurement and Data Management System Based	331
		on Arduino Platform and Android Device	
		Yanpin Ren and Nan Lyu	
SaA2.3	9:40-10:00	ERN: Explicit Rate Notification AQM for TCP-IP Networks	335
		Abderrahmane Boudi and Malik Loudini	
SaA2.4	10:00-10:20	Optimal Threshold of Energy Detector under Noise Variance	341
		Uncertainty for Coarse Spectrum Sensing	
		Modar Shbat, Francisco Ordaz Salazar and Javier Gonzalez Salas	
SaA2.5	10:20-10:40	A Multi-network Control Framework Based on Industrial	346
		Internet of Things	
		Ying Duan, Wenfeng Li, Ye Zhong and Xiuwen Fu	
SaA2.6	10:40-11:00	A 16-bit 4 MSPS DAC for lock-in amplifier in 65nm CMOS	351
		Aiman Noorwali, Ahmad Doost, Anh Huynh and Syed Qasim	
SaA2.7	11:00-11:20	Simulation Analysis of EKF and UKF Implementations in	356
		PHD Filter	
		Xiaoying Wang and Jiacun Wang	

SaB1, Salon Michoano

Fault Detection

Chairs: Xuemin Chen/ Samuel Lopez

No.	Time	Paper	page
SaB1.1	11:30-11:50	You want to survive the data deluge? Be careful:	362
		Computational Intelligence will not be your rescue boat	
		Emanuel Diamant	
SaB1.2	11:50-12:10	Hazardous materials network design based on management	366
		restrictions	
		Samuel López-Ruiz, Rafael Carmona-Benitez and Esther Segura	
SaB1.3	12:10-12:30	An Improved Design and Implementation of Layer 4	370
		Network Load Balancing Switch	
		Chifu Yao and Xuemin Chen	

SaB2, Salon Colonial

Social networks

Chairs: Mengchu Zhou / Bella Martinez

No.	Time	Paper	Page
SaB2.1	11:30-11:50	Collaborative Tensor Factorization and its Application in POI Recommendation	393
		Wenjing Luan, Guanjun Liu and Changjun Jiang	
SaB2.2	11:50-12:10	Analysis for NOMA-CoMP-JT Global Precoding Matrix and IRC Receiver for LTE-A	399
		Heba Ahmed	
SaB2.3	12:10-12:30	An Integrated AHP and VIKOR Approach to Evaluating Green Design Alternatives	405
		Guangdong Tian, Honghao Zhang, Mengchu Zhou and Hongfei Jia	
SaB2.4	12:30-12:50	Ranking Features in Facebook to Detect Overlapping	411
		Communities Bella Martinez Seis and Xiaoou Li	
SaB2.5	12:50-13:10	Assessing and Mitigating the Impact of the Energy Demand in 2030 on the Dutch Regional Power Distribution Grid Werner van Westering, Arjen Zondervan, Arjan Bakkeren, Frederik Mijnhardt and Joris van der Els	417
SaB2.6	13:10-13:30	A Data-driven Approach to Predict Small-for-gestational- age Infants Jingchao Sun, Lu Liu, Jianqiang Li, Jijiang Yang, Shi Chen, Qing Wang, Mengchu Zhou, Rong Li, Bo Liu and Jing Bi	423
SaB2.7	13:30-13:50	A Dynamic TDMA-Based Sleep Scheduling to Minimize WSN Energy Consumption Adelcio Biazi, Cesar Marcon, Fauzi Shubeita, Letícia Poehls, Thais Webber and Fabian Vargas	429
SaB2.8	13:50-14:10	Analyzing the Evolution of Rare Events via Social Media Data and k-means Clustering Algorithm Xiaoyu Sean Lu and Mengchu Zhou	435