

2019 IEEE 29th International Workshop on Machine Learning for Signal Processing (MLSP 2019)

**Pittsburgh, Pennsylvania, USA
13 – 16 October 2019**



**IEEE Catalog Number: CFP19NNS-POD
ISBN: 978-1-7281-0825-4**

**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:	CFP19NNS-POD
ISBN (Print-On-Demand):	978-1-7281-0825-4
ISBN (Online):	978-1-7281-0824-7
ISSN:	1551-2541

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

LEARNING WARM-START POINTS FOR AC OPTIMAL POWER FLOW	1
<i>Kyri Baker</i>	
MINIMAX ACTIVE LEARNING VIA MINIMAL MODEL CAPACITY	7
<i>Shachar Shayovitz ; Meir Feder</i>	
OPTIMAL PRICING IN BLACK BOX PRODUCER-CONSUMER STACKELBERG GAMES USING REVEALED PREFERENCE FEEDBACK	13
<i>Anup Aprem ; Stephen J. Roberts</i>	
ON SPARSE COMPLEX GAUSSIAN GRAPHICAL MODEL SELECTION	19
<i>Jitendra K. Tugnait</i>	
MULTI-STEP CHORD SEQUENCE PREDICTION BASED ON AGGREGATED MULTI-SCALE ENCODER-DECODER NETWORKS	25
<i>Tristan Carsault ; Andrew McLeod ; Philippe Esling ; Jérôme Nika ; Eita Nakamura ; Kazuyoshi Yoshii</i>	
ROBUST HYBRID BEAMFORMING WITH QUANTIZED DEEP NEURAL NETWORKS	31
<i>Ahmet M. Elbir ; Kumar Vijay Mishra</i>	
AH-COLT: AN AI-HUMAN CO-LABELING TOOLBOX TO AUGMENT EFFICIENT GROUNDTRUTH GENERATION	37
<i>Xiaofei Huang ; Behnaz Rezaei ; Sarah Ostadabbas</i>	
A MACHINE LEARNING APPROACH FOR CLASSIFYING FAULTS IN MICROGRIDS USING WAVELET DECOMPOSITION	43
<i>Aya Khalaf ; Hashim A. Al Hassan ; Adam Emes ; Murat Akcakaya ; Brandon M. Grainger</i>	
ROBUST IMPORTANCE-WEIGHTED CROSS-VALIDATION UNDER SAMPLE SELECTION BIAS	49
<i>Wouter M. Kouw ; Jesse H. Krijthe ; Marco Loog</i>	
INTERPRETABLE ONLINE BANKING FRAUD DETECTION BASED ON HIERARCHICAL ATTENTION MECHANISM	55
<i>Idan Achituve ; Sarit Kraus ; Jacob Goldberger</i>	
A BENCHMARK STUDY OF BACKDOOR DATA POISONING DEFENSES FOR DEEP NEURAL NETWORK CLASSIFIERS AND A NOVEL DEFENSE	61
<i>Zhen Xiang ; David J. Miller ; George Kesidis</i>	
MULTI-LEVEL MEAN-SHIFT CLUSTERING FOR SINGLE-CHANNEL RADIO FREQUENCY SIGNAL SEPARATION	67
<i>Yi Zhou ; Yi Feng ; Vahid Tarokh ; Vadas Gintautas ; Jessee McClelland ; Denis Garagic</i>	
KALMAN FILTER CHANGEPOINT DETECTION AND TREND CHARACTERIZATION	73
<i>Scott Kuzdeba ; Brandon Hombs ; Jeremy D. Greenlee ; Frank H. Guenther</i>	
SOFT DROPOUT AND ITS VARIATIONAL BAYES APPROXIMATION	79
<i>Jiyang Xie ; Zhanyu Ma ; Guoqiang Zhang ; Jing-Hao Xue ; Zheng-Hua Tan ; Jun Guo</i>	
UNKNOWN SIGNAL DETECTION IN LINEAR DYNAMICAL SYSTEM NOISE	85
<i>Gabriel Ford ; Timothy Hu ; Donald Bucci ; Benjamin Foster</i>	
ONLINE LEARNING FOR INDOOR ASSET DETECTION	91
<i>Adith Balamurugan ; Avideh Zakhor</i>	
ROBUST BAYESIAN TRANSFER LEARNING BETWEEN KALMAN FILTERS	97
<i>Milan Papež ; Anthony Quinn</i>	
VAE/WGAN-BASED IMAGE REPRESENTATION LEARNING FOR POSE-PRESERVING SEAMLESS IDENTITY REPLACEMENT IN FACIAL IMAGES	103
<i>Hiroki Kawai ; Jiawei Chen ; Prakash Ishwar ; Janusz Konrad</i>	
HILBERT-SPACE REDUCED-RANK METHODS FOR DEEP GAUSSIAN PROCESSES	109
<i>Muhammad F. Emzir ; Sari Lasanen ; Zenith Purisha ; Simo Särkkä</i>	
AUDIO-VISUAL FUSION AND CONDITIONING WITH NEURAL NETWORKS FOR EVENT RECOGNITION	115
<i>Mathilde Brousmiche ; Jean Rouat ; Stéphane Dupont</i>	
ASYMPTOTICS OF MAXIMUM LIKELIHOOD PARAMETER ESTIMATES FOR GAUSSIAN PROCESSES: THE ORNSTEIN-UHLENBECK PRIOR	121
<i>Toni Karvonen ; Filip Tronarp ; Simo Särkkä</i>	
A WEIGHTED ORDERED PROBIT COLLABORATIVE KALMAN FILTER FOR HOTEL RATING PREDICTION	127
<i>Myrsini Ntemi ; Constantine Kotropoulos ; Emmanouil Gionanidis</i>	

RECOGNITION OF ATYPICAL BEHAVIOR IN AUTISM DIAGNOSIS FROM VIDEO USING POSE ESTIMATION OVER TIME	132
<i>Kathan Vyas ; Rui Ma ; Behnaz Rezaei ; Shuangjun Liu ; Michael Neubauer ; Thomas Ploetz ; Ronald Oberleitner ; Sarah Ostadabbas</i>	
LESS IS MORE: DEEP LEARNING USING SUBJECTIVE ANNOTATIONS FOR SENTIMENT ANALYSIS FROM SOCIAL MEDIA	138
<i>Christina Tzogka ; Nikolaos Passalis ; Alexandros Iosifidis ; Moncef Gabbouj ; Anastasios Tefas</i>	
HACD: HIERARCHICAL AGGLOMERATIVE COMMUNITY DETECTION IN SOCIAL NETWORKS	144
<i>Ekta Gujral ; Evangelos E. Papalexakis ; Georgios Theodorou ; Anup Rao</i>	
LOW-RESOURCE LANGUAGE IDENTIFICATION FROM SPEECH USING TRANSFER LEARNING	150
<i>Kexin Feng ; Theodora Chaspari</i>	
THE FRIENDSHIP PARADOX: IMPLICATIONS IN STATISTICAL INFERENCE OF SOCIAL NETWORKS	156
<i>Buddhika Nettasinghe ; Vikram Krishnamurthy</i>	
DEEP CLUSTERING BASED ON A MIXTURE OF AUTOENCODERS	162
<i>Shlomo E. Chazan ; Sharon Gannot ; Jacob Goldberger</i>	
EEG-BASED TEXTURE CLASSIFICATION DURING ACTIVE TOUCH	168
<i>Safaa Eldeeb ; Jordyn Ting ; Deniz Erdogmus ; Douglas Weber ; Murat Akcakaya</i>	
PREVENTING POISONING ATTACKS ON AI BASED THREAT INTELLIGENCE SYSTEMS	174
<i>Nitika Khurana ; Sudip Mittal ; Aritran Piplai ; Anupam Joshi</i>	
INFORMATION-PRESERVING NETWORKS AND THE MIRRORED TRANSFORM	180
<i>Francesco A. N. Palmieri ; Mario Baldi ; Giovanni Di Gennaro ; Amedeo Buonanno</i>	
A NEW APPROACH TO ONLINE REGRESSION BASED ON MAXIMUM CORRENTROPY CRITERION	186
<i>Sajjad Bahrani ; Ertem Tuncel</i>	
DEEP LEARNING FOR MRI RECONSTRUCTION USING A NOVEL PROJECTION BASED CASCADED NETWORK	192
<i>Deniz Kocanaogullari ; Ender M. Eksioğlu</i>	
INSIGHTS INTO THE BEHAVIOUR OF MULTI-TASK DEEP NEURAL NETWORKS FOR MEDICAL IMAGE SEGMENTATION	198
<i>Lukasz T. Bienias ; Juanjo R. Guillamón ; Line H. Nielsen ; Tommy S. Alstrøm</i>	
A BAYESIAN GENERATIVE MODEL WITH GAUSSIAN PROCESS PRIORS FOR THERMOMECHANICAL ANALYSIS OF MICRO-RESONATORS	204
<i>Maximillian F. Vording ; Peter O. Okeyo ; Juan J. R. Guillamón ; Peter E. Larsen ; Mikkel N. Schmidt ; Tommy S. Alstrøm</i>	
AUTHNET: BIOMETRIC AUTHENTICATION THROUGH ADVERSARIAL LEARNING	210
<i>Arslan Ali ; Matteo Testa ; Tiziano Bianchi ; Enrico Magli</i>	
SCALABLE COMMUNITY DETECTION IN THE HETEROGENEOUS STOCHASTIC BLOCK MODEL	216
<i>Andre Beckus ; George K. Atia</i>	
EFFICIENT PARAMETER ESTIMATION FOR SEMI-CONTINUOUS DATA: AN APPLICATION TO INDEPENDENT COMPONENT ANALYSIS	222
<i>Sai K. Popuri ; Zois Boukouvalas</i>	
ON CONVERGENCE OF PROJECTED GRADIENT DESCENT FOR MINIMIZING A LARGE-SCALE QUADRATIC OVER THE UNIT SPHERE	228
<i>Trung Vu ; Raviv Raich ; Xiao Fu</i>	
LOW-DIMENSIONAL DECOMPOSITION OF MANIFOLDS IN PRESENCE OF OUTLIERS	234
<i>Mahlagha Sedghi ; George Atia ; Michael Georgiopoulos</i>	
STRENGTH ADJUSTED MULTILAYER SPECTRAL CLUSTERING	240
<i>Abdullah Karaaslanli ; Selin Aviyente</i>	
COLLABORATIVE INFERENCE OF MISSING SMART ELECTRIC METER DATA FOR A BUILDING	246
<i>Nan Duan ; Jose Cadena ; Pedro Sotorrio ; Jhi-Young Joo</i>	
EXTENDED VARIATIONAL INFERENCE FOR PROPAGATING UNCERTAINTY IN CONVOLUTIONAL NEURAL NETWORKS	252
<i>Dimah Dera ; Ghulam Rasool ; Nidhal Bouaynaya</i>	
EFFICIENT CAPON-BASED APPROACH EXPLOITING TEMPORAL WINDOWING FOR ELECTRIC NETWORK FREQUENCY ESTIMATION	258
<i>George Karantaidis ; Constantine Kotropoulos</i>	

DEEP BAYESIAN UNSUPERVISED SOURCE SEPARATION BASED ON A COMPLEX GAUSSIAN MIXTURE MODEL	264
<i>Yoshiaki Bando ; Yoko Sasaki ; Kazuyoshi Yoshii</i>	
WAVE PHYSICS INFORMED DICTIONARY LEARNING IN ONE DIMENSION	270
<i>Harsha Vardhan Tetali ; K. Supreet Alguri ; Joel B. Harley</i>	
A SPATIOTEMPORAL DEEP LEARNING SOLUTION FOR AUTOMATIC MICRO-EXPRESSIONS RECOGNITION FROM LOCAL FACIAL REGIONS	276
<i>Mouath Aouayeb ; Wassim Hamidouche ; Kidiyo Kpalma ; Amel Benazza-Benyahia</i>	
A GENERATIVE MACHINE LEARNING APPROACH TO RFI MITIGATION FOR RADIO ASTRONOMY	282
<i>Etienne E. Vos ; P. S. Francois Luus ; Chris J. Finlay ; Bruce A. Bassett</i>	
IMPROVING NEURAL NON-MAXIMUM SUPPRESSION FOR OBJECT DETECTION BY EXPLOITING INTEREST-POINT DETECTORS.....	288
<i>Charalampos Symeonidis ; Ioannis Mademlis ; Nikos Nikolaidis ; Ioannis Pitas</i>	
AUTOMATIC SCREENING OF CHILDREN WITH SPEECH SOUND DISORDERS USING PARALINGUISTIC FEATURES	294
<i>Mostafa Shahin ; Beena Ahmed ; Daniel V. Smith ; Andreas Duenser ; Julien Epps</i>	
ACCELERATING NONNEGATIVE MATRIX FACTORIZATION OVER POLYNOMIAL SIGNALS WITH FASTER PROJECTIONS.....	299
<i>Cécile Hauteceour ; François Glineur</i>	
ON CONVERGENCE RATE OF ADAPTIVE MULTISCALE VALUE FUNCTION APPROXIMATION FOR REINFORCEMENT LEARNING	305
<i>Tao Li ; Quanyan Zhu</i>	
COMBINING DEEP NEURAL NETWORKS AND BEAMFORMING FOR REAL-TIME MULTI-CHANNEL SPEECH ENHANCEMENT USING A WIRELESS ACOUSTIC SENSOR NETWORK	311
<i>Enea Ceolini ; Shih-Chii Liu</i>	
SELF-SUPERVISED REPRESENTATION LEARNING FROM ELECTROENCEPHALOGRAPHY SIGNALS	317
<i>Hubert Banville ; Isabela Albuquerque ; Aapo Hyvärinen ; Graeme Moffat ; Denis-Alexander Engemann ; Alexandre Gramfort</i>	
DEEP REINFORCEMENT LEARNING BASED ENERGY BEAMFORMING FOR POWERING SENSOR NETWORKS.....	323
<i>Ayça Özgelikkale ; Mehmet Koseoglu ; Mani Srivastava ; Anders Ahlén</i>	
DISTRIBUTED MULTI-VIEW SUBSPACE CLUSTERING VIA AUTO-WEIGHTED SPECTRAL EMBEDDING	329
<i>Pei-Che Chang ; Cheng-Yuan Cheng ; Y.-W. Peter Hong</i>	
REGULARIZED STATE ESTIMATION AND PARAMETER LEARNING VIA AUGMENTED LAGRANGIAN KALMAN SMOOTHER METHOD	335
<i>Rui Gao ; Filip Tronarp ; Zheng Zhao ; Simo Särkkä</i>	
TOWARDS ETHICAL CONTENT-BASED DETECTION OF ONLINE INFLUENCE CAMPAIGNS	341
<i>Evan Crothers ; Nathalie Japkowicz ; Herna L Viktor</i>	
GENERIC BOUNDS ON THE MAXIMUM DEVIATIONS IN SEQUENTIAL PREDICTION: AN INFORMATION-THEORETIC ANALYSIS	347
<i>Song Fang ; Quanyan Zhu</i>	
BLOCK-TERM TENSOR DECOMPOSITION VIA CONSTRAINED MATRIX FACTORIZATION	353
<i>Xiao Fu ; Kejun Huang</i>	
PROTEIN TRACKING BY CNN-BASED CANDIDATE PRUNING AND TWO-STEP LINKING WITH BAYESIAN NETWORK	359
<i>Mariia Dmitrieva ; Helen L. Zenner ; Jennifer Richens ; Daniel St Johnston ; Jens Rittscher</i>	
DYNAMIC SYSTEM IDENTIFICATION FOR GUIDANCE OF STIMULATION PARAMETERS IN HAPTIC SIMULATION ENVIRONMENTS.....	365
<i>Andac Demir ; Safaa Eldeeb ; Murat Akcakaya ; Deniz Erdogmus</i>	
INCREMENTAL DICTIONARY LEARNING FOR ADAPTIVE CLASSIFICATION AND RECONSTRUCTION OF FACIAL IMAGERY	371
<i>Mahmood R. Azimi-Sadjadi ; Christopher Robbiano ; Yinghui Zhao ; John J. Hall</i>	
INCORPORATING INTRA-SPECTRAL DEPENDENCIES WITH A RECURRENT OUTPUT LAYER FOR IMPROVED SPEECH ENHANCEMENT	377
<i>Khandokar M. Nayem ; Donald S. Williamson</i>	
COMPRESSIVE CLASSIFICATION FROM SINGLE PIXEL MEASUREMENTS VIA DEEP LEARNING.....	383
<i>Jorge Bacca ; Claudia V. Correa ; Edwin Vargas ; Sergio Castillo ; Henry Arguello</i>	

CENTER-ASSISTED PERSONAL GAIT AUTHENTICATION USING ORIENTATION ADVERSARIAL FEATURE EXTRACTION	389
<i>Yun-Lin Tsai ; Y.-W. Peter Hong</i>	
VOICE ANONYMIZATION IN URBAN SOUND RECORDINGS.....	395
<i>Alice Cohen-Hadria ; Mark Cartwright ; Brian McFee ; Juan Pablo Bello</i>	
LARGE-SCALE SPARSE SUBSPACE CLUSTERING USING LANDMARKS	401
<i>Farhad Pourkamali-Anaraki</i>	
HIGH-RESOLUTION WATER SEGMENTATION FOR AUTONOMOUS UNMANNED SURFACE VEHICLES: A NOVEL DATASET AND EVALUATION	407
<i>Jussi Taipalmaa ; Nikolaos Passalis ; Honglei Zhang ; Moncef Gabbouj ; Jenni Raitoharju</i>	
REJECTION-SAMPLING-BASED ANCESTOR SAMPLING FOR PARTICLE GIBBS.....	413
<i>Roland Hostettler ; Simo Särkkä</i>	
COLLABORATIVE LEARNING THROUGH SHARED COLLECTIVE KNOWLEDGE AND LOCAL EXPERTISE	419
<i>Javad Mohammadi ; Soheil Kolouri</i>	
A NEURAL NETWORK MODEL OF SPATIAL DISTORTION SENSITIVITY FOR VIDEO QUALITY ESTIMATION.....	425
<i>Sören Becker ; Klaus-Robert Müller ; Thomas Wiegand ; Sebastian Bosse</i>	
INCREMENTAL LABEL PROPAGATION ON FACIAL IMAGES.....	431
<i>Efstathios Kakaletsis ; Anastasios Tefas ; Nikos Nikolaidis ; Ioannis Pitas</i>	
VISUALIZING HIGH DIMENSIONAL DYNAMICAL PROCESSES.....	437
<i>Andrés F. Duque ; Guy Wolf ; Kevin R. Moon</i>	
DEEP CONVOLUTIONAL COMPRESSION FOR MASSIVE MIMO CSI FEEDBACK	443
<i>Qianqian Yang ; Mahdi Boloursaz Mashhadi ; Deniz Gündüz</i>	
A MULTIMODAL DENSE U-NET FOR ACCELERATING MULTIPLE SCLEROSIS MRI	449
<i>Antonio Falvo ; Danilo Comminiello ; Simone Scardapane ; Michele Scarpiniti ; Aurelio Uncini</i>	
RANDNET: DEEP LEARNING WITH COMPRESSED MEASUREMENTS OF IMAGES	455
<i>Thomas Chang ; Bahareh Tolooshams ; Demba Ba</i>	
EEG SIGNAL DIMENSIONALITY REDUCTION AND CLASSIFICATION USING TENSOR DECOMPOSITION AND DEEP CONVOLUTIONAL NEURAL NETWORKS.....	461
<i>Mojtaba Taherisadr ; Mohsen Joneidi ; Nazanin Rahnavard</i>	
SINGLE-PIXEL CAMERA SENSING MATRIX DESIGN FOR HIERARCHICAL COMPRESSED SPECTRAL CLUSTERING.....	467
<i>Carlos Hinojosa ; Jorge Bacca ; Edwin Vargas ; Sergio Castillo ; Henry Arguello</i>	
BASIS LEARNING AUTOENCODERS FOR HYBRID COLLABORATIVE FILTERING IN COLD START SETTING	473
<i>Kiwon Lee ; Hyeonsoo Jo ; Hyoji Kim ; Yong H. Lee</i>	
BAYESIAN INTENT PREDICTION FOR FAST MANEUVERING OBJECTS USING VARIABLE RATE PARTICLE FILTERS.....	479
<i>Runze Gan ; Jiaming Liang ; Bashar I. Ahmad ; Simon Godsill</i>	
UNSUPERVISED DRIFT COMPENSATION BASED ON INFORMATION THEORY FOR SINGLE-MOLECULE SENSORS.....	485
<i>Mohamed Ouqamra ; Delphine Bouilly</i>	
ONLINE ANOMALY DETECTION IN MULTIVARIATE SETTINGS.....	491
<i>Mahsa Mozaffari ; Yasin Yilmaz</i>	
MIMO CHANNEL ESTIMATION WITH NON-IDEAL ADCS: DEEP LEARNING VERSUS GAMP	497
<i>Marcos Yuichi Takeda ; Aldebaro Klautau ; Amine Mezghani ; Robert W. Heath</i>	
EFFICIENT PRE-DESIGNED CONVOLUTIONAL FRONT-END FOR DEEP LEARNING	503
<i>Hamza Baali ; Abdesselam Bouzerdoun</i>	
A DEEP NETWORK FOR SINGLE-SNAPSHOT DIRECTION OF ARRIVAL ESTIMATION	508
<i>Emma Ozanich ; Peter Gerstoft ; Haiqiang Niu</i>	
MENTAL WORKLOAD CLASSIFICATION FROM SPATIAL REPRESENTATION OF FNIRS RECORDINGS USING CONVOLUTIONAL NEURAL NETWORKS.....	514
<i>Marjan Saadati ; Jill Nelson ; Hasan Ayaz</i>	
PRIVACY-AWARE DISTRIBUTED GRAPH-BASED SEMI-SUPERVISED LEARNING.....	520
<i>Basak Güler ; A. Salman Avestimehr ; Antonio Ortega</i>	
JOINT MULTI-LAYER GAN-BASED DESIGN OF TENSORIAL RF METASURFACES	526
<i>John A. Hodge ; Kumar Vijay Mishra ; Amir. I. Zaghoul</i>	
ANALYZING TRANSFER LEARNING METHODS FOR UXO CLASSIFICATION IN VARYING SHALLOW WATER ENVIRONMENTS.....	532
<i>Nathan Larson ; Jack Hall ; M. R. Azimi-Sadjadi</i>	

FINDING LOW-DIMENSIONAL DYNAMICAL STRUCTURE THROUGH VARIATIONAL AUTO-ENCODING DYNAMIC MODE DECOMPOSITION	538
<i>Shin Murata ; Yuma Koizumi ; Noboru Harada</i>	
QUANTIZED VARIATIONAL BAYESIAN JOINT CHANNEL ESTIMATION AND DATA DETECTION FOR UPLINK MASSIVE MIMO SYSTEMS WITH LOW RESOLUTION ADCS	544
<i>Sai Subramanyam Thoota ; Chandra R. Murthy ; Ramesh Annavajjala</i>	
END-TO-END DETECTION OF ATTACKS TO AUTOMATIC SPEAKER RECOGNIZERS WITH TIME-ATTENTIVE LIGHT CONVOLUTIONAL NEURAL NETWORKS	550
<i>João Monteiro ; Jahangir Alam ; Tiago H. Falk</i>	
RL-NCS: REINFORCEMENT LEARNING BASED DATA-DRIVEN APPROACH FOR NONUNIFORM COMPRESSED SENSING	556
<i>Nazmul Karim ; Alireza Zaeemzadeh ; Nazanin Rahnavard</i>	
GENERATIVE MODELS FOR LOW-RANK VIDEO REPRESENTATION AND RECONSTRUCTION FROM COMPRESSIVE MEASUREMENTS	562
<i>Rakib Hyder ; M. Salman Asif</i>	
OPTIMAL MOBILE RELAY BEAMFORMING VIA REINFORCEMENT LEARNING.....	568
<i>Konstantinos Diamantaras ; Athina Petropulu</i>	
INTERFERENCE CHARACTERIZATION IN WIRELESS NETWORKS: A DETERMINANTAL LEARNING APPROACH	574
<i>Chiranjib Saha ; Harpreet S. Dhillon</i>	
A CASCADING BANDIT APPROACH TO EFFICIENT MOBILITY MANAGEMENT IN ULTRA-DENSE NETWORKS	580
<i>Chao Wang ; Ruida Zhou ; Jing Yang ; Cong Shen</i>	
Author Index	