



## Contents

Proceedings .....	1
FNC 2014 Preface	
H. Hassanein, N. Ansari .....	7
MobiSPC 2014 Preface	
H.M. Ammari, L. Cheng .....	10
Keynote I M2M Communication, Actuation and Coordination Challenges in Large Scale IoT/CPS	
I. Stojmenovic .....	12
Keynote II Data Center Networking	
S.R. Das .....	13
<b>The 9th International Conference on Future Networks and Communications</b>	
<b>The 9th International Conference on Future Networks and Communications</b> .....	14
A Simplified Posteriori Estimator to Cascade Channel based on Amplify-and-Forward Multi-relaying Systems	
H. Liu, H. Ding, J. Yuan, L. Zheng, S. Wang .....	15
Outage and BER Performance Analysis of Cascade Channel in Relay Networks	
H. Liu, H. Ding, L. Xiang, J. Yuan, L. Zheng .....	23
Blind Separation of Synchronous-networking Frequency Hopping Signals based on Time-frequency Analysis	
Z. Lei, L. Zheng, H. Ding, H. Liu, Y. Liu .....	31
Using Wavelength/Time Signatures Scrambling to Realize Cryptographic Coded-WDM Data Networks	
J.-F. Huang, S.-H. Meng, Y.-C. Lin, K.-S. Chen, A.-C. Huang .....	39
Photonic Timeslot Interchangers with a Reduced Number of Feed-forward Fiber Delay Lines	
L.E. Hasnawi, R.A. Thompson .....	47
A Multicriterion Fuzzy Classification Method with Greedy Attribute Selection for Anomaly-based Intrusion Detection	
E.-S.M. El-Alfy, F.N. Al-Obeidat .....	55
Energy Efficient and Safe Weighted Clustering Algorithm for Mobile Wireless Sensor Networks	
D. Amine, B. Nassreddine, K. Bouabdellah .....	63
Analysis of Routing and Wavelength Assignment in Large WDM Networks	
R.T. Koganti, D. Sidhu .....	71
Enhancement of Energy Conservation Technologies in Wireless Sensor Network	
V. Thayananthan, A. Alzranhi .....	79
A Framework for LTE-A Proximity-based Device-to-Device Service Registration and Discovery	
S. Doumiati, H. Artail, D.M. Gutierrez-Estevez .....	87
“Server-less” Social Network for Enhanced Privacy	
D. Bedrossian, A. Harb, R. Khalil, A. Chehab, H.A. Artail .....	95
Wireless Sensor Network System Design Using Raspberry Pi and Arduino for Environmental Monitoring Applications	
S. Ferdoush, X. Li .....	103
Topology-based Proactive Network Protection in Large-scale Failure Scenarios	
A. Izaddoost, S.S. Heydari .....	111
Evaluating SDN based Rack-to-Rack Multi-path Switching for Data-center Networks	
M. Koerner, O. Kao .....	118
Human Positioning Estimation Method Using Received Signal Strength Indicator (RSSI) in a Wireless Sensor Network	
K. Oguchi, S. Maruta, D. Hanawa .....	126
LTE-WiFi Carrier Aggregation for Future 5G Systems: A Feasibility Study and Research Challenges	
R. Alkhansa, H. Artail, D.M. Gutierrez-Estevez .....	133
Universal Connector Framework for Pervasive Computing Using Cloud Technologies	
H. Mcheick, L. Deladiennee, M. Wajnberg, B. Martin, M. Abi-Khalil .....	141
Determining Fuzzy Link Quality Membership Functions in Wireless Sensor Networks	
S. Kazmi, R. Liscano, J. Ren .....	149
IEEE 802.11 WLAN based Real Time Indoor Positioning: Literature Survey and Experimental Investigations	
G. Kul, T. Özyer, B. Tavli .....	157
A Cost-effective Wireless Sensor Network System for Indoor Air Quality Monitoring Applications	
S. Abraham, X. Li .....	165

Space Time Block Code for Next Generation Multi-user MIMO Systems N. Sharma .....	172
Comparison by Simulation of Energy Consumption and WSN Lifetime for LEACH and LEACH-SM B.A. Bakr, L.T. Lilien .....	180
Decision Making Framework with Stochastic Dynamicity: A Step Forward towards SDN S.A. Mushtaq, N. Sajjad, S. Razzaq .....	188
On Enhancing Network Reliability and Throughput for Critical-range based Applications in UWSNs A. Umar, M.A. Hasnat, M. Behzad, I. Baseer, Z.A. Khan, U. Qasim, N. Javaid .....	196
Analyzing and Evaluating Contention Access Period of Slotted CSMA/CA for IEEE802.15.4 D. Mahmood, Z.A. Khan, U. Qasim, M.U. Naru, S. Mukhtar, M.I. Akram, N. Javaid .....	204
IDDR: Improved Density Controlled Divide-and-Rule Scheme for Energy Efficient Routing in Wireless Sensor Networks F. Saleem, Y. Moeen, M. Behzad, M.A. Hasnat, Z.A. Khan, U. Qasim, N. Javaid .....	212
Design and Development of a Low Cost Ubiquitous Tracking System M. Behzad, A. Sana, M.A. Khan, Z. Walayat, U. Qasim, Z.A. Khan, N. Javaid .....	220
Forwarding Nodes Constraint based DBR (CDBR) and EEDBR (CEEDBR) in Underwater WSNs S. Mahmood, H. Nasir, S. Tariq, H. Ashraf, M. Pervaiz, Z.A. Khan, N. Javaid .....	228
Optimal Placement of RFID Antennas for Outdoor Applications T. Alkhdour, E. Shakshuki .....	236
An Algorithm for Handling Starvation and Resource Rejection in Public Clouds H. Kurdi, E. Aloboud, S. Alhassan, E.T. Alotaibi .....	242
A Hybrid Approach for Scheduling Virtual Machines in Private Clouds H. Kurdi, E.T. Alotaibi .....	249
ABAMA: An Agent-based Architecture for Mapping Natural Ecosystems onto Wireless Sensor Networks N. Jabeur, N. Sahli, S. Zeadally .....	257
Investigative Support for Information Confidentiality Part II: Applications in Cryptanalysis and Digital Forensics J. Jaskolka, R. Khedri, K.E. Sabri .....	266
Investigative Support for Information Confidentiality Part I: Detecting Confidential Information Leakage via Protocol-based Covert Channels J. Jaskolka, R. Khedri, K.E. Sabri .....	276
Vehicle as a Mobile Sensor S. Abdelhamid, H.S. Hassanein, G. Takahara .....	286
<b>The 11th International Conference on Mobile Systems and Pervasive Computing</b>	
<b>The 11th International Conference on Mobile Systems and Pervasive Computing</b> .....	296
Smarter Smartphones: Understanding and Predicting User Habits from GPS Sensor Data G. Maggiore, C. Santos, A. Plaat .....	297
Early Diagnosis of Parkinson's Disease Using a Smartphone K.-C. Lan, W.-Y. Shih .....	305
Indoor Positioning with an Enterprise Radio Access Network J. Brassil, C. Pearson, L. Fuller .....	313
Mobile Authentication Secure against Man-In-The-Middle Attacks K. Bicakci, D. Unal, N. Ascioğlu, O. Adalier .....	323
Access-pattern Aware Checkpointing Data Storage Scheme for Mobile Computing Environment X. Li, M. Yang, C. Men, Y. Jiang, K. Udagepola .....	330
Central and Distributed GPU based Parallel Disk Systems for Data Intensive Applications M. Nijim, S. Saha, Y. Nijim .....	338
MVCC: An Architectural Pattern for Developing Context-aware Frameworks H. Shams, K. Zamanifar .....	344
Nearby Friend Discovery with Geo-indistinguishability to Stalkers C. Ma, C.W. Chen .....	352
Touching the Data: Exploring Data Sonification on Mobile Touchscreen Devices D. Nikitenko, D. Gillis .....	360
A Handset-centric View of Smartphone Application Use J. Rana, J. Bjelland, T. Couronne, P. Sundsøy, D. Wagner, A. Rice .....	368
Evaluating the Raw Potential for Device-to-Device Caching via Co-location X. Hu, L. Meng, A.D. Striegel .....	376
DAB: Dynamic and Agile Buffer-control for Streaming Videos on Mobile Devices Y. Mao, J. Wang, B. Sheng .....	384
CA <sup>2</sup> T: Cooperative Antenna Arrays Technique for Pinpoint Indoor Localization X. Wang, S. Mao, S. Pandey, P. Agrawal .....	392
Drowsy Driving Detection by EEG Analysis Using Wavelet Transform and K-means Clustering N. Gurudath, H.B. Riley .....	400

Configurable Integrated Monitoring System for Mobile Devices C. Miller, C. Poellabauer .....	410
LTE and WiFi: Experiences with Quality and Consumption A. Striegel, S. Liu, X. Hu, L. Meng .....	418
MobiDyC: Private Mobile-based Health Data Sharing through Dynamic Context Handling N. Ammar, Z. Malik, A. Rezgui, M. Alodib .....	426
Scalable Cloudlet-based Mobile Computing Model Y. Jararweh, L. Tawalbeh, F. Ababneh, A. Khreishah, F. Dosari .....	434
Toward Location based Vehicular Networks in Urban Environments H. Li, Y. Liu, S. Zhou, H. Xu .....	442
A Study on Human Activity Recognition Using Accelerometer Data from Smartphones A. Bayat, M. Pomplun, D.A. Tran .....	450
Sentiment Analysis on Reviews of Mobile Users L. Zhang, K. Hua, H. Wang, G. Qian, L. Zhang .....	458
An Accurate and Multi-faceted Reputation Scheme for Cloud Computing M. Wang, G. Wang, J. Tian, H. Zhang, Y. Zhang .....	466
A Practical, Secure, and Verifiable Cloud Computing for Mobile Systems S.N. Premnath, Z.J. Haas .....	474
WiLoVe: A WiFi-coverage based Location Verification System in LBS X. Lin, W. He .....	484
<b>Workshops</b>	
<b>Proceedings Workshops 2014 Affiliated with The 9th International Conference on Future Networks and Communications</b> .....	
Extending Lifetime of Wireless Sensor Networks by Management of Spare Nodes B.A. Bakr, L.T. Lilien .....	493
Deploying a LEACH Data Aggregation Technique for Air Quality Monitoring in Wireless Sensor Network H.M. Abdulsalam, B.A. Ali, A. AlYatama, E.S. AlRoumi .....	499
Towards a Dual-mode Adaptive MAC Protocol (DMA-MAC) for Feedback-based Networked Control Systems A.A.K. Somappa, K. Øvsthus, L.M. Kristensen .....	505
A Cloud-based Healthcare Framework for Security and Patients' Data Privacy Using Wireless Body Area Networks F.A. Khan, A. Ali, H. Abbas, N. Al Hasan Haldar .....	511
Performance Analysis of Priority Queuing Model for Low Power Wireless Body Area Networks (WBANs) M. Iftikhar, N. Al Elaiwi, M.S. Aksoy .....	518
Adaptive Video Streaming Using TCP Factors Control with User Parameters Y. Douga, M. Bourenane, A. Mellouk .....	526
Security Issues and Challenges for the IoT-based Smart Grid C. Bekara .....	532
Power-aware Mapping for 3D-NoC Designs Using Genetic Algorithms H. Elmiligi, F. Gebali, M.W. El-Kharashi .....	538
SMARTs: A Tool to Simulate and Analyze the Performance of Real-time Multi-core Systems M. Sharma, H. Elmiligi, F. Gebali .....	544
Packet-based Adaptive Virtual Channel Configuration for NoC Systems M.O. Gharan, G.N. Khan .....	552
Vehicles-to-Infrastructure Communication Safety Messaging in DSRC K.S. Nwizege, M. Bottero, S. Mmeh, E.D. Nwiwure .....	559
A Link Quality Prediction Metric for Location based Routing Protocols under Shadowing and Fading Effects in Vehicular Ad Hoc Networks C.T. Ngo, H. Oh .....	565
Virtual Machine Resource Allocation for Multimedia Cloud: A Nash Bargaining Approach M.M. Hassan, A. Alamri .....	571
Sensing Optimization in Cooperative Cognitive Radio Networks M. Pirmoradian, O. Adigun, C. Politis .....	577
TELEMODE–A Proposal towards Technology Enhanced Learning, Engineered with MOBILE DEVICES V.R. Chary .....	583
A Semantic Approach for Service Adaptation in Context-aware Environment H. Guermah, T. Fissaa, H. Hafiddi, M. Nassar, A. Kriouile .....	587
Assessing the Utility of Mobile Applications with Support for or as Replacement of Hearing Aids M.C. Offiah, S. Rosenthal, M. Borschbach .....	593
Heterogeneous Epidemic Model for Assessing Data Dissemination in Opportunistic Networks L. Rozanova, V. Alekseev, A. Temerev .....	601
Extraction of Interesting Adaptation Rules R. Nasfi, M. Soui .....	607

Generic Email Connector for Mobile Devices H. Mcheick, A. Poirrier, J. Abdelaziz, A. Lakiss .....	613
A Generic Layered Architecture for Context Aware Applications B. Mamo, D. Ejigu .....	619
A Cloud-based Interaction Management System Architecture for Mobile Devices E.R. Sykes .....	625
A New RWLS Positioning Method Basing on Distance Information H. Ding, L. He, L. Zheng, J. Yuan, L. Xiang .....	633
A Tiny RSA Cryptosystem based on Arduino Microcontroller Useful for Small Scale Networks Q. Abu Al-Haija, M. Al Tarayrah, H. Al-Qadeeb, A. Al-Lwaimi .....	639
Efficient FPGA Implementation of RSA Coprocessor Using Scalable Modules Q. Abu Al-Haija, M. Smadi, M. Al-Ja'fari, A. Al-Shua'ibi .....	647
SLA-driven Federated Cloud Networking: Quality of Service for Cloud-based Software Defined Networks A. Stanik, M. Koerner, L. Lymberopoulos .....	655
Providing Infrastructure Functions for Virtual Networks by Applying Node Plug-in Architecture Y. Kanada .....	661
Evaluating the Impact of Software-defined Networks' Reactive Routing on BitTorrent Performance D. Vicino, C.-H. Lung, G. Wainer, O. Dalle .....	668
Efficient Routing for Traffic Offloading in Software-defined Network S.M. Park, S. Ju, J. Lee .....	674
A Comparison of Data Forwarding Schemes for Network Resiliency in Software Defined Networking R. Vaghani, C.-H. Lung .....	680