

2012 18th IEEE International Conference on Networks

(ICON 2012)

**Singapore
12 – 14 December 2012**



IEEE Catalog Number: CFP12226-PRT
ISBN: 978-1-4673-4521-7

TABLE OF CONTENTS

SMARTPHONE-BASED VEHICULAR AND ACTIVITY SENSING	1
<i>K. Ang, C. Tham</i>	
A GENERIC SLA NEGOTIATION PROTOCOL FOR VIRTUALIZED ENVIRONMENTS	7
<i>R. Gomes, L. Bittencourt, E. Madeira</i>	
A SIMPLE MODEL TO CHARACTERIZE SOCIAL NETWORKS	13
<i>R. Zeng, H. Shen, T. Xu</i>	
QOS BASED SPECTRUM DECISION FRAMEWORK FOR COGNITIVE RADIO NETWORKS	18
<i>V. Mishra, L. Tong, C. Syin</i>	
MIGRATION COST AWARE VIRTUAL NETWORK RE-EMBEDDING IN PRESENCE OF RESOURCE FAILURES	24
<i>X. Chang, J. Muppala, B. Wang, J. Liu, L. Sun</i>	
ON THE ANALYSIS OF MULTICAST TRAFFIC OVER THE ENTITY TITLE ARCHITECTURE	30
<i>F. Silva, M. Goncalves, J. Pereira, R. Pasquini, P. Rosa, S. Kofuji</i>	
AVERAGE SYSTEM CAPACITY IN A TWO-TIER LTE ENVIRONMENT WITH RANDOM WAYPOINT MOBILE USERS	36
<i>A. Knapp, S. Imre, Z. Jako, G. Jeney</i>	
A FLOW-BASED PERFORMANCE ANALYSIS OF TCP AND TCP APPLICATIONS	41
<i>L. Qian, B. Carpenter</i>	
ON THE USE OF LOCATION WINDOW IN GEO-INTELLIGENT HTTP ADAPTIVE VIDEO STREAMING	46
<i>J. Fardous, S. Kanhere</i>	
HIGH PERFORMANCE PARALLEL PACKET CLASSIFICATION ARCHITECTURE WITH POPULAR RULE CACHING	52
<i>S. Gamage, A. Pasqual</i>	
USING WMS LOG FILES AS AN INDICATOR OF QOS AND APPLICATION PERFORMANCE IN ON-DEMAND STREAMING VIDEOS	58
<i>I. Hakala, S. Laine</i>	
A PERFORMANCE MODEL OF PEDESTRIAN DEAD RECKONING WITH ACTIVITY-BASED LOCATION UPDATES	64
<i>M. Hassan</i>	
THE EFFECT OF PAYLOAD LENGTH ON QOS IN IEEE 802.11S WIRELESS MESH NETWORKS	70
<i>E. Elahi, A. Qayyum, S. Naz</i>	
ENERGY-EFFICIENT COOPERATIVE MIMO ROUTING IN WIRELESS SENSOR NETWORKS	74
<i>P. He, H. Tian, H. Shen</i>	
DISTRIBUTED VERTICAL HANDOVER MANAGEMENT FOR WIRELESS MESH NETWORKS	80
<i>P. Shah, O. Chughtai, M. Rehan, H. Hasbullah</i>	
A SURVEY ON ROUTING PROTOCOLS IN WIRELESS SENSOR NETWORKS	86
<i>M. Patil, R. Biradar</i>	
A NOVEL RFID AND CAPACITIVE SENSING BASED SMART BOOKSHELF	92
<i>W. Liu, B. Ng, T. Lim, L. Bin, B. Soong, A. Nasir, M. Chia</i>	
EFFECTIVE NEGATIVE KERR NON-LINEAR COEFFICIENT USING HIGHLY NON-LINEAR FIBERS: A SCALABLE BACKWARD PROPAGATION APPROACH	98
<i>R. Asif, M. Islam, M. Zafrullah</i>	
TRUSTED NETWORK CODING FRAMEWORK	103
<i>H. Al-Najjar, N. Rousan</i>	
NON-UNIFORM STEP-SIZE BASED SPLIT STEP FOURIER METHOD FOR MITIGATING FIBER TRANSMISSION IMPAIRMENTS IN N-CHANNEL 224GBIT/S POLMUX-16QAM SYSTEM	109
<i>R. Asif, C. Lin, B. Schmauss</i>	
PERFORMANCE STUDY OF WDM OPS EMPLOYING TUNABLE CONVERTER SHARING UNDER SELF-SIMILAR VARIABLE LENGTH PACKET TRAFFIC	114
<i>S. Kumar, M. Perati, T. Adilakshmi</i>	
ON OPTIMIZING THE TRANSMISSION POWER OF MULTI-HOP UNDERWATER ACOUSTIC NETWORKS	120
<i>C. Wang, Y. Fang, H. Zhang</i>	

PERFORMANCE OPTIMIZATION BASED ON NON-ADDITIVE MEASUREMENT UNDER HETEROGENEOUS NETWORK.....	125
<i>Q. Tan, Y. Han, H. Tang, S. Ci</i>	
QUEUE-AWARE SCHEDULING AND CONGESTION CONTROL FOR LTE	131
<i>A. Zolfaghari, H. Taheri</i>	
PIPELINED FORWARDING WITH ENERGY BALANCE IN HEXAGONAL WIRELESS SENSOR NETWORKS.....	137
<i>T. Sheu, Y. Shang</i>	
ACHIEVING FAIRNESS FOR MULTI-CLASS TRAFFIC IN DIRECTIONAL MULTI-INTERFACE IEEE 802.11S MCCA	143
<i>S. Chakraborty, S. Nandi</i>	
ADDRESS AUTO-CONFIGURATION IN MANET WITH MULTIPLE GATEWAYS: ANALYSIS AND MEASUREMENT	149
<i>Y. Yonghang, C. Linlin, W. Zhiming, Z. Lili</i>	
ON THE CONNECTIVITY OF WIRELESS NETWORKS WITH MULTIPLE DIRECTIONAL ANTENNAS	155
<i>H. Xu, H. Dai, Q. Zhao</i>	
RADIO MAP POSITION INFERENCE ALGORITHM FOR INDOOR POSITIONING SYSTEMS	161
<i>W. Liu, B. Ng, B. Liu, Y. Guan, Y. Leow, J. Huang</i>	
SCALABLE NETWORK-AWARE DATA CENTRE FEDERATION	167
<i>S. Lor, L. Vaquero, D. Audein, P. Murray, H. Puthalath, B. Melander, A. Sefidcon, T. Edwall, J. Soares, M. Melo, J. Carapinha, H. Medhioub, D. Zeglache</i>	
AN ATTACK RESISTANT METHOD FOR DETECTING DISHONEST RECOMMENDATIONS IN PERVASIVE COMPUTING ENVIRONMENT	173
<i>N. Iltaf, A. Ghafoor, U. Zia</i>	
PEER SELECTION IN MOBILE P2P NETWORKS BASED ON AHP AND GRA	179
<i>Y. Liu, X. Zhou, S. Ren, L. Yang, S. Ci</i>	
RESOURCE ALLOCATION ALGORITHM BASED ON SOCIAL RELATION FOR VIDEO STREAMING SERVICES OVER P2P NETWORK.....	185
<i>D. Ho, H. Song</i>	
EFFECTIVE REGULATION OF CHUNKS FOR IMPROVED VIDEO CONTINUITY IN P2P VIDEO-ON-DEMAND.....	191
<i>M. Shayegi, D. Dias, M. Samrajesh</i>	
PERFORMANCES EVALUATION OF DIFFERENT ALGORITHMS FOR PCIS SELF CONFIGURATION IN LTE	197
<i>M. Krichen, D. Barth, O. Marce</i>	
OPTIMAL PROVISIONING FOR SCHEDULING DIVISIBLE LOADS WITH RESERVED CLOUD RESOURCES	204
<i>M. Hu, J. Luo, B. Veeravalli</i>	
SMART JOB SCHEDULING WITH BACKUP SYSTEM IN GRID ENVIRONMENT	210
<i>H. Al-Najjar, M. Jarrah</i>	
DYNAMIC REAL-TIME SCHEDULING WITH TASK MIGRATION FOR HANDLING BAG-OF-TASKS APPLICATIONS ON CLUSTERS	222
<i>M. Hu, J. Luo</i>	
OPENFLOW BASED CONTROL FOR RE-ROUTING WITH DIFFERENTIATED FLOWS IN DATA CENTER NETWORKS	228
<i>R. Kanagavelu, L. Mingjie, K. Aung, B. Lee, F. Heryandi</i>	
INTERNATIONAL NETWORK RESEARCH TESTBED FACILITIES BASED ON OPENFLOW: ARCHITECTURE, SERVICES, TECHNOLOGIES, AND DISTRIBUTED INFRASTRUCTURE	234
<i>J. Mambretti, J. Chen, F. Yeh</i>	
EXTENDING THE RISE CONTROLLER FOR THE INTERCONNECTION OF RISE AND OS3E/NDDI.....	243
<i>S. Ishii, E. Kawai, T. Takata, Y. Kanaumi, S. Saito, K. Kobayashi, S. Shimojo</i>	
PERFORMANCE ANALYSIS OF AN OPTIMAL INTERNAL CONGESTION CONTROL IN A CLUSTER-BASED ROUTER.....	249
<i>Q. Ye, S. Mortazavi, M. MacGregor</i>	
MOLECULAR COMMUNICATION MODEL THROUGH GAP JUNCTION CHANNEL WITH SELECTIVE PERMEABILITIES.....	256
<i>Y. Yang, C. Ye</i>	
ON CHANNEL ADAPTATION IN IEEE 802.15.4 MOBILE BODY SENSOR NETWORKS: WHAT CAN BE GAINED?	262
<i>E. Yazdi, A. Willig, K. Pawlikowski</i>	

REMOTE TRACKING PROTOCOL WITH PREDICTIVE LOCALIZATION ALGORITHM	268
<i>A. Pathak, W. Wong, H. Guo, Y. Wu</i>	
EMERGING WIRELESS PERSONAL AREA NETWORKS (WPANS): AN ANALYSIS OF TECHNIQUES, TOOLS AND THREATS.....	274
<i>R. Hunt</i>	
MULTI-INTERFACE COGNITIVE RADIO AND ITS IMPACT ON ROUTING IN MULTI-HOP CELLULAR NETWORKS.....	280
<i>G. Thomas, B. Seet</i>	
HYBRID FREQUENCY-TIME DOMAIN PROPORTIONAL FAIR RESOURCE ALLOCATION SCHEME FOR LTE DOWNLINK.....	286
<i>A. Al-Amri, S. Al-Zahrani, M. Al-Harhi, M. Al-Qarni, I. Ahmed</i>	
AN ANALYTICAL MODEL OF A-MSDU SCHEME WITH ENHANCED BLOCK ACK FOR IEEE 802.11N NETWORKS.....	291
<i>T. Arif, R. Sari</i>	
DESIGN AND IMPLEMENTATION OF A REAL TIME LOCATING SYSTEM UTILIZING WI-FI SIGNALS FROM IPHONES.....	299
<i>M. Bharanidharan, X. Li, Y. Jin, J. Pathmasuntharam, G. Xiao</i>	
A PHYSICAL LAYER IMPLEMENTATION OF IEEE 802.22 PROTOTYPE.....	304
<i>K. Toh, M. Takekawa, K. Hasegawa, K. Yanagisawa, S. Sasaki, M. Asano</i>	
INTRODUCTION TO 1900.7 NETWORK ARCHITECTURE, DESIGN AND CURRENT STATUS.....	315
<i>V. Hoang, X. Zhang, S. Filin, H. Harada</i>	
A BLIND POWER DIFFERENTIATION SCHEME FOR ENERGY DETECTION-BASED SPECTRUM SENSING	320
<i>B. Zhao, S. Sasaki</i>	
IEEE 802.15.4M: THE FIRST LOW RATE WIRELESS PERSONAL AREA NETWORKS OPERATING IN TV WHITE SPACE	326
<i>C. Sum, M. Zhou, L. Lu, R. Funada, F. Kojima, H. Harada</i>	
SESSION MANAGEMENT IN A MULTI-CHANNEL VIDEO STREAMING SYSTEM FOR WIRELESS NETWORKS.....	333
<i>R. Nossenson, N. Amram</i>	
EFFICIENT RATE-QUANTIZATION MODEL FOR FRAME LEVEL RATE CONTROL IN SPATIALLY SCALABLE VIDEO CODING.....	339
<i>X. Jing, J. Tham, Y. Wang, K. Goh, W. Lee</i>	
MULTIPLE DESCRIPTION CODING FOR SCALABLE VIDEO CODING WITH REDUNDANT SLICE.....	344
<i>C. Lin, Y. Zhao, H. Bai, K. Goh</i>	
RESILIENT VIDEO CODING USING DIFFERENCE EXPANSION AND HISTOGRAM MODIFICATION.....	349
<i>R. Farrugia</i>	
DISTORTION ESTIMATION FOR COMPRESSED VIDEO TRANSMISSION OVER MOBILE NETWORKS.....	355
<i>Y. Wang, X. Jing, J. Tham, Y. Zhao</i>	
MULTIPLE-STREAMING METHOD FOR SVC VIDEO BY VIRTUALIZATION OF NETWORK INTERFACE IN WIRELESS ENVIRONMENT.....	360
<i>S. Ahn, C. Yoo</i>	
QOE-DRIVEN CROSS-LAYER OPTIMIZED VIDEO TRANSMISSION SCHEME OVER MIMO-OFDM SYSTEMS.....	364
<i>G. Lv, Y. Hu, S. Ci, H. Tang</i>	
EXTRACTING INTERNET BACKGROUND RADIATION FROM RAW TRAFFIC USING GREYNET.....	370
<i>L. Miao, W. Ding, H. Zhu</i>	
NEW DEVELOPMENTS IN NETWORK FORENSICS – TOOLS AND TECHNIQUES.....	376
<i>R. Hunt</i>	
AN ANTI-SPAM METHOD VIA REAL-TIME RETRANSMISSION DETECTION.....	382
<i>N. Kitagawa, H. Takakura, T. Suzuki</i>	
PROTECTING AN WSN FROM INTERNAL ATTACK BASED ON EPISTEMIC UNCERTAINTIES.....	389
<i>X. Huang, D. Sharma, M. Ahmed, H. Cui</i>	
EMPIRICAL ANALYSIS AND COMPARISON OF IPV4-IPV6 TRAFFIC: A CASE STUDY ON THE CAMPUS NETWORK.....	395
<i>Q. Li, T. Qin, X. Guan, Q. Zheng</i>	

AN IMPROVED KERBEROS PROTOCOL BASED ON DIFFIE-HELLMAN-DSA KEY EXCHANGE	400
<i>Z. Hu, Y. Zhu, L. Ma</i>	
BEE-C: A BIO-INSPIRED ENERGY EFFICIENT CLUSTER-BASED ALGORITHM FOR DATA CONTINUOUS DISSEMINATION IN WIRELESS SENSOR NETWORKS.....	405
<i>A. Rego, J. Junior, A. Santos, E. Cerqueira, A. Patel, M. Taghavi</i>	
EXTENSIBLE PROCESSOR SPEEDS UP IP LOOKUP	411
<i>P. Gautam, M. Jagtap</i>	
A SCALABLE PIPELINE ARCHITECTURE FOR IPV4/IPV6 ROUTE LOOKUP.....	416
<i>Y. Wu, G. Nong</i>	
ENHANCED ANT COLONY ALGORITHM FOR SELF-OPTIMIZED DATA ASSURED ROUTING IN WIRELESS SENSOR NETWORKS.....	422
<i>K. Saleem, N. Faisal</i>	
SECURE COMMUNICATION USING DYNAMIC VPN PROVISIONING IN AN INTER-CLOUD ENVIRONMENT	428
<i>A. Sajjad, A. Zisman, M. Rajarajan, S. Nair, T. Dimitrakos</i>	
AN INTRUSION TOLERANT SYSTEM FOR IMPROVING AVAILABILITY IN SMART GRID CONTROL CENTERS	434
<i>M. Tanha, F. Hashim</i>	
SELFISH ALLOCATION AVOIDANCE FOR P2P FILE APPLICATION: A GAME THEORETIC APPROACH	441
<i>F. Zuo, W. Zhang</i>	
ON IMPROVING DYNAMIC STOCHASTIC ROUTING ALGORITHMS IN OVERLAY NETWORKS.....	447
<i>C. Zhang, X. Hei, W. Liu, W. Cheng</i>	
ERROR CONTROL STRATEGIES FOR TRANSMIT-ONLY SENSOR NETWORKS: A CASE STUDY	453
<i>R. Cardell-Oliver, A. Willig, C. Huebner, T. Buehring, A. Monsalve</i>	
SELF SIMILARITY AND PREDICTABILITY OF CONTACT OPPORTUNITIES IN OPPORTUNISTIC NETWORKS.....	459
<i>T. Kathiravelu, N. Ranasinghe</i>	
ISSUES OF DATA RELIABILITY IN INDOOR CHANNEL:IMPACT ON THE ENERGY EFFICIENCY OF BATTERY POWERED WIRELESS SENSOR NODES	465
<i>D. Basu, G. Gupta, G. Moretti</i>	
SCALABLE DATA DISSEMINATION PROTOCOL FOR WIRELESS SENSOR NETWORKS	471
<i>H. Lu, C. Foh, J. Cai</i>	
Author Index	