

2018 IEEE Colombian Conference on Communications and Computing (COLCOM 2018)

**Medellin, Colombia
16-18 May 2018**



IEEE Catalog Number: CFP1852S-POD
ISBN: 978-1-5386-6821-4

**Copyright © 2018 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:	CFP1852S-POD
ISBN (Print-On-Demand):	978-1-5386-6821-4
ISBN (Online):	978-1-5386-6820-7

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

COMPARISON OF NUMERICAL METHODS FOR THE ANALYSIS OF POWER DISTRIBUTION NETWORKS WITH LARGE NUMBER OF PORTS	1
<i>R. Haro-Baez, D. Benitez</i>	
EVALUATION OF THE VOICE QUALITY AND QOS IN REAL CALLS USING DIFFERENT VOICE OVER IP CODECS	6
<i>M. Ortega, G. Altamirano, M. Abad</i>	
AUTONOMOUS QOS-BASED MECHANISM FOR RESOURCE ALLOCATION IN LTE-ADVANCED PRO NETWORKS.....	12
<i>E. Santos</i>	
ON THE DESIGN OF ACTIVE LC OSCILLATORS USING SMALL-SIGNAL MODEL NETWORK ANALYSIS.....	18
<i>E. Proano, M. Navarro, A. Sanchez, D. Benitez</i>	
THE "GREEN WAVE" AS AN EFFECTIVE MOBILITY PROGRAM TOWARDS SUSTAINABLE TRANSPORT IN COLOMBIA: A STUDY CASE OF CITY OF CALI	24
<i>M. Mosquera, A. Idrobo, G. Llano</i>	
BC-MED: PLATAFORMA DE REGISTROS MÉDICOS ELECTRONICOS SOBRE TECNOLOGIA BLOCKCHAIN	31
<i>O. Gutierrez, J. Saavedra, P. Wightman, A. Salazar</i>	
EVALUATION OF PLATFORMS AND FRAMEWORKS FOR HIGH PERFORMANCE EMBEDDED SOFTWARE DEFINED RADIOS	37
<i>F. Guzman, C. Gomez, V. Usuga</i>	
POWER EFFICIENT GPU-BASED ACCELERATOR FOR EMBEDDED SDR APPLICATIONS	42
<i>F. Guzman, C. Gomez, V. Usuga</i>	
DYNAMIC GALLAGER-HUMBLET-SPIRA ALGORITHM FOR WIRELESS SENSOR NETWORKS.....	49
<i>S. Diaz, D. Mendez, M. Scholzel</i>	
PERFORMANCE ANALYSIS OF A VANET WITH OPTIMAL INFRASTRUCTURE LOCATION IN SETTING URBAN	55
<i>R. Cumbal, X. Calderon, R. Hincapie, L. Urquiza, G. Arevalo</i>	
AN ENERGY CONSUMPTION MODEL FOR MULTIMODAL WIRELESS SENSOR NETWORKS BASED ON WAKE-UP RADIO RECEIVERS	61
<i>J. Aranda, M. Scholzel, D. Mendez, H. Carrillo</i>	
DEVELOPMENT OF AN IEC-61499 PID CONTROL FOR INDUSTRIAL PROCESSES APPLICATIONS	67
<i>G. Caiza, M. Saeteros, C. Pillajo, G. Arevalo</i>	
SCRUM+: AN AGILE GUIDE FOR THE GLOBAL SOFTWARE DEVELOPMENT (GSD) MULTI-MODEL PROJECT MANAGEMENT	72
<i>P. Chilito, D. Viveros, C. Pardo, F. Pino</i>	
IMPACT OF CONTROL MECHANISMS CONTAINMENT IN OPTICAL BURST SWITCHING DISTRIBUTED NETWORKS	78
<i>K. Guevara-Ortiz, S. Bermudez-Quintero, A. Puentes, N. Villabona-Mujica, L. Rosero, D. Suarez-Rivero, S. Villamizar-Delgado, J. Ortiz-Aguilar</i>	
SYSTEM OF REMOTE MONITORING AND CONTROL FOR "GENERADOR FLUJO DE ELECTRONES" IN GASOLINE VEHICLES	84
<i>J. Molina, J. Patarroyo, A. Diaz</i>	
REDUCTION OF ENERGY CONSUMPTION IN THE HOME USING GAMIFICATION IN THE SYSTEMS OF ENERGY MANAGEMENT (HEM)	90
<i>Z. Maury, A. Vilas, R. Redondo</i>	
SEAMLESS HANDOFF MANAGEMENT IN IEEE 802.11 NETWORKS USING SDN	96
<i>S. Martinez, N. Cardona, J. Botero</i>	
FEATURES TO DETECT ANDROID MALWARE.....	102
<i>C. Lopez, J. Villareal, A. Belalcazar, A. Cadavid, J. Cely</i>	
CLOUD ADOPTION IN ECUADOR: CURRENT STATUS, CHALLENGES AND OPPORTUNITIES	108
<i>E. Boza, C. Abad, M. Villavicencio, S. Quimba</i>	
UDEALIGNC: FAST ALIGNMENT FOR THE COMPRESSION OF DNA READS	114
<i>J. Lotero, A. Benavides, A. Guerra, S. Isaza</i>	

TOWARDS A REAL-TIME AIR POLLUTION MONITORING SYSTEMS IMPLEMENTED USING WIRELESS SENSOR NETWORKS: PRELIMINARY RESULTS.....	120
<i>B. Guanochanga, R. Cachipuendo, W. Fuertes, D. Benitez, T. Toulkeridis, J. Torres, C. Villacis, F. Tapia, F. Meneses</i>	
IMPACT OF METADATA SERVER ON A LARGE SCALE FILE SYSTEM.....	124
<i>R. Patgiri, S. Nayak, S. Borgohain</i>	
PERFORMANCE EVALUATION OF SPATIAL MODULATION TECHNIQUES IN CORRELATED MIMO V2V CHANNELS	130
<i>J. Cortez, C. Gutierrez, F. Castillo-Soria, J. Luna-Rivera, F. Maciel-Barboza, E. Ruiz</i>	
OPTIMAL PLACEMENT OF DATA AGGREGATION POINTS FOR SMART METERING USING WIRELESS HETEROGENEOUS NETWORKS	136
<i>E. Inga, R. Hincapie, M. Campana, S. Cespedes</i>	
DOPPLER POWER SPECTRUM MEASUREMENTS OF VEHICULAR CHANNELS IN TH 700 MHZ BAND	142
<i>C. Gomez-Vega, C. Gutierrez, J. Jaime-Rodriguez, J. Castillo</i>	
CASSAM: CONTEXT-AWARE SYSTEM FOR SAFETY MESSAGES DISSEMINATION IN VANTETS	148
<i>A. Yanez, S. Cespedes, J. Rubio-Loyola</i>	
ANALYSIS OF EPILEPTIC SEIZURE PREDICTIONS BASED ON INTRACRANIAL EEG RECORDS.....	154
<i>E. Carrera, F. Quinga</i>	
A LOW-COST REAL-TIME EMBEDDED VEHICLE COUNTING AND CLASSIFICATION SYSTEM FOR TRAFFIC MANAGEMENT APPLICATIONS	159
<i>L. Pico, D. Benitez</i>	
DSSAT: DSS ANTHRACNOSIS IN TOMATO CROPS	165
<i>Y. Urrea, F. Vivas, O. Caicedo</i>	
QOS EVALUATION OF THE FUTURE HIGH-EFFICIENCY IEEE 802.11AX WLAN STANDARD	171
<i>J. Sanchez-Mahecha, S. Cespedes, J. Bustos-Jimenez</i>	
MONITORING AND IRRIGATION OF AN URBAN GARDEN USIN IOT	177
<i>G. Carrion, M. Huerta, B. Barzallo</i>	
ADMISSION CONTROL IMPLEMENTATION FOR QOS PERFORMANCE EVALUATION OVER SDWN.....	183
<i>A. Jimenez, J. Bolero, J. Urrea</i>	
ENERGY-EFFICIENT TRANSMISSION STRATEGIES WITH MULTIPLE RADIOS IN COGNITIVE RADIO: BEYOND RENDEZVOUS	189
<i>S. Montejano-Sanchez, R. Souza, C. Azurdia-Meza, E. Fernandez, J. Aranda-Cubillo, I. Soto</i>	
GUIDELINES TO IMPLEMENT VIDEO DATASET TO ASSESS VIDEO QUALITY	194
<i>D. Acosta, J. Cuellar, J. Arciniegas</i>	
ANALISIS DE DESEMPEÑO COMPUTACIONAL DEL PROCESAMIENTO DISTRIBUIDO DE UNA IMPLEMENTACION DE BOLSA DE PALABRAS EN APACHE SPARK™	200
<i>Y. Porras-Garcia, R. Calderon-Moreno, A. Cruz-Roa</i>	
IOT SOLUTION FOR DATA SENSING IN A SMART CAMPUS USING SMARTPHONE SENSORS.....	206
<i>J. Alonso, C. Bayona, O. Rojas, M. Teran, J. Aranda, H. Carrillo, C. Parra</i>	
STUDY OF SOMEWHAT HOMOMORPHIC ENCRYPTION SCHEME FOR IMAGE EROSION AND DILATION	212
<i>O. Hurtado-Guarnizo, M. Duarte-Gonzalez</i>	
Author Index	