

2016 IEEE Congreso Argentino de Ciencias de la Informatica y Desarrollos de Investigacion (CACIDI 2016)

**Buenos Aires, Argentina
30 November – 2 December 2016**



**IEEE Catalog Number: CFP16H47-POD
ISBN: 978-1-5090-2939-6**

**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:	CFP16H47-POD
ISBN (Print-On-Demand):	978-1-5090-2939-6
ISBN (Online):	978-1-5090-2938-9

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

A PEDAGOGICAL PROPOSAL FOR TEACHING OBJECT-ORIENTED PROGRAMMING - IMPLEMENTATION THROUGH THE EDUCATIONAL SOFTWARE WOLLOK.....	1
<i>Lucas Spigariol</i>	
CREATING A USABILITY LAB FOR TESTING ON MOBILE DEVICES USING FREE TOOLS.....	7
<i>Rocio A. Rodriguez, Pablo M. Vera, Gabriela Y. Valles, M. Roxana Martinez</i>	
APPROACHES FOR MEASURING THE LEVEL OF TECHNOLOGICAL DEVELOPMENT OF INDUSTRIAL SECTORS.....	13
<i>Alicia Mon, Horacio Rene Del Giorgio, Eduardo De Maria</i>	
AUGMENTED CARD SYSTEM BASED ON KNOWLEDGE FOR MEDICAL EMERGENCY ASSISTANCE	17
<i>J. Ierache, N. Mangiarua, N. Verdicchio, D. Sanz, C. Montalbo, F. Petrolo, S. Igarza</i>	
BUILDING HONEY-BASED TERRITORIAL IDENTITY FOR THE FORMOSA MONTE THROUGH INFORMATION EXPLOITATION USING INTELLIGENT SYSTEMS.....	20
<i>G. Cayu, G. Aguero, G. Balbarrey, M. Cabrera, C. Carrera, P. Britos, H. Vivas</i>	
DATA STRUCTURES, FROM THEORY TO BITS - USING THEORY OF FORMAL LANGUAGES TO ANALYZE STRUCTURED DATA	24
<i>Eric Nothen, Maria De Fatima Mastroianni</i>	
RELIABILITY ASSESSMENT OF FPGAS.....	30
<i>Jose Luis Roca, Ricardo Julian, Ariel Serra</i>	
DETECTION SENSORS APPLIED TO ORTHOPEDIC DEVICES FOR ELDERLY	36
<i>Matías Monge, Mauro Cáceres D'Amore, Julia Muse, Nicolás Jeremías, Ezequiel Iriso, Joaquín Gonzalez, Deolindo Zanuttini</i>	
APPLICATION OF WIRELESS TECHNOLOGY TO DETERMINE OPTIMUM MATURITY IN STRAINS OF MALBEC VINEYARDS FOR ARGENTINE WINE SECTORS.....	42
<i>Maria Claudia Abeledo, Fabio Bruschetti, Daniel Alberto Priano, Dana Calbosa, Rita Crubellier, Pedro Iriso, Esteban Abete</i>	
SPEAKER-INDEPENDENT EMBEDDED SPEECH RECOGNITION USING HIDDEN MARKOV MODELS.....	49
<i>Mariano Marufo Da Silva, Diego A. Evin, Sebastian Verrastro</i>	
ROBOTICS AS A TEACHING AID IN UNIVERSITY COURSES.....	55
<i>Silvia Cobialca</i>	
AN EDUCATIVE ENVIRONMENT BASED ON ONTOLOGIES AND E-LEARNING FOR TRAINING ON DESIGN OF SPEECH-LANGUAGE THERAPY PLANS FOR CHILDREN WITH DISABILITIES AND COMMUNICATION DISORDERS	59
<i>Fanny Chuchuca-M'endez, Vladimir Robles-Bykbaev, Pablo Vanegas-Peralta, Juan Lucero-Saldana, Mart n Lopez-Nores, Jose Pazos-Arias</i>	
AN INTELLIGENT ECOSYSTEM TO SUPPORT PSYCHOLOGICAL EVALUATION AND INTERVENTION OF CHILDREN UNDER SOCIAL RISK: TOWARDS GRAPHICS DESIGN VALIDATION AND NEW FINDINGS.....	65
<i>A. Pacurucu-Pacurucu, F. Pesantez-Aviles, S. Escobar-Cobos, A. Poveda-Pulla, E. Borck-Vintimilla, V. Cevallos Leon Wong, V. Robles-Bykbaev, M. Cobos-Cali</i>	
SIMULATION OF PULSE PROPAGATION IN NONLINEAR OPTICAL FIBERS USING GPUS	71
<i>G. Kuracz, L. Reina Kiperman, F. Reyna, P. I. Fierens</i>	
CLASSIFYING MICROCALCIFICATIONS ON DIGITAL MAMMOGRAPHY USING MORPHOLOGICAL DESCRIPTORS AND ARTIFICIAL NEURAL NETWORK.....	76
<i>Estefania D. Avalos-Rivera, Alberto De J. Pastrana-Palma</i>	
A BRIEF HISTORY OF THE EVOLUTION OF HPC AT A RESEARCH INSTITUTION IN ARGENTINA.....	80
<i>Roberto Bevilacqua</i>	
PERFORMANCE ANALYSIS OF ALGORITHMS BASED ON INTELLIGENCE OF PLANTS	84
<i>Marília Orquiza De Azevedo, V. Leonardo Paucar</i>	
REMOTE MONITORING OF ELDERLY OR PARTIALLY DISABLED PEOPLE LIVING IN THEIR HOMES THROUGH THE MEASUREMENT OF ENVIRONMENTAL VARIABLES	90
<i>Maria Claudia Abeledo, Fabio Bruschetti, Gaston Aguilera, Pedro Iriso, Matias Marsicano, Aldana Lacapmesure</i>	
ENHANCING EXOTHERMIC PROCESSES IN BATCH REACTORS USING DMC BASED ON MODELS.....	95
<i>Carlos Medina-Ramos, Judith Betetta, Daniel Carbonel, Milagros Manrique</i>	

SYNTACTIC ANALYSIS ON PROGRAMMING LANGUAGES - A SIMPLE APPROACH EMPLOYING AUTOMATA THEORY.....	101
<i>Mariano E. Aprea, Maria De Fatima Mastroianni</i>	
SYNTHETIC APERTURE ULTRASOUND IMAGING USING GPUS (GENERACIÓN DE IMÁGENES DE ULTRASONIDO POR APERTURA SINTÉTICA UTILIZANDO GPUS)	107
<i>Juan Manuel Iriarte, Guillermo Cosarinsky, Jose Brizuela</i>	
IOT FALL DETECTION SYSTEM FOR THE ELDERLY USING INTEL GALILEO DEVELOPMENT BOARDS GENERATION I.....	112
<i>Sebastian Barillaro, Gerardo G. Garcia, Esteban A. Carnuccio, Graciela De Luca</i>	
SOCIAL IMPACT ASSESSMENT ON A HYDROCARBON PROYECT USING TRIANGULAR WHITENIZATION WEIGHT FUNCTIONS.....	118
<i>Alexi Delgado, I. Romero</i>	
APPLYING SHANNON ENTROPY TO SELECT ALTERNATIVE PLANTS AS FOOD FOR LIVESTOCK: A CASE STUDY IN ECUADOR	124
<i>Alexi Delgado, Exequiel Cárdenas Reyes</i>	
IMPROVING TEACHING AND LEARNING IN SYSTEMS PROGRAMMING COURSES USING PARTICIPATORY ACTION RESEARCH.....	129
<i>Alexi Delgado, Julio Vasquez Paragulla</i>	
COMPARATIVE ANALYSIS OF GAME THEORY APPLICATION TO VARIOUS TYPES OF AUCTIONS IN ELECTRIC MARKETS	134
<i>Nilson Sá Costa Filho, Felipe O. S. Saraiva, V. Leonardo Paucar</i>	
REQUIREMENTS IN WEB APPLICATIONS DEVELOPMENT	139
<i>Alejandro Oliveros, Fabian Napolillo, Federico Lopez Infesta</i>	
EMBEDDED COMMUNICATING SYSTEM FOR VICUNAS MIGRATION MONITORING: PROTOCOL DESIGN AND VERIFICATION FOR LOW ENERGY CONSUMPTION	144
<i>Esteban Volentini, Daniel Cohen, Juan Gruer</i>	
ONTOCONCEPT: TOOL FOR ONTOLOGY CHANGE MANAGEMENT, BASED ON CONCEPTUAL MODELS	149
<i>Julio C. Chavarro, Carlos A. Meneses</i>	
A HIGH EFFICIENCY FLUORESCENT LAMP ELECTRONIC BALLAST DESIGN	155
<i>Jhon F. Bayona, Harold R. Chamorro, Andres C. Sanchez, Jacobo Aguillon-Garcia, Diego A. Rubio</i>	
LINEAR CONTROL OF A POWER FACTOR CORRECTION RECTIFIER IN HALF-BRIDGE CONFIGURATION	159
<i>Jhon F. Bayona, Harold R. Chamorro, Andres C. Sanchez, Jacobo Aguillon-Garcia, Diego A. Rubio</i>	
EDUCATIONAL PROCESS OF PRE-COLUMBIAN AMERICAN CIVILIZATIONS SUPPORTED BY A FRAMEWORK THAT INTEGRATES GOOGLMAPS TO DOTLRN.....	165
<i>Fabinton Sotelo Gomez, Armando Ordonez</i>	
NON-VERBAL COMMUNICATION INTERFACE USING A DATA GLOVE	170
<i>Luis N. Jofré, Graciela B. Rodríguez, Yoselie M. Alvarado, Jacqueline M. Fernández, Roberto A. Guerrero</i>	
SOFTWARE PRODUCT CERTIFICATION: AN ACADEMIC-INDUSTRY CERTIFICATION PROJECT	176
<i>Angeleri Paula, Titiosky Rolando, Ceballos Jorge, Masper Christian, Sánchez Alberto, Menal Marcelo, Vinjoy Marcelo</i>	
Author Index	