

2024 IEEE Biennial Congress of Argentina (ARGENCON 2024)

**San Nicolas de los Arroyos, Argentina
18-20 September 2024**

Pages 1-641



IEEE Catalog Number: CFP2480X-POD
ISBN: 979-8-3503-6594-8

**Copyright © 2024 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:	CFP2480X-POD
ISBN (Print-On-Demand):	979-8-3503-6594-8
ISBN (Online):	979-8-3503-6593-1

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

TABLE OF CONTENTS

Reverse Engineering for a Ball-Plate Control System for Educational Purposes.....	1
<i>Emilia Villarroel, Oscar Camacho</i>	
A Dual-Adaptive PID Control Approach for Nonlinear Processes with Variable Parameters	7
<i>Sebastian Vega, Matias Bravo, Oscar Camacho</i>	
Characterization of Surge Suppression Devices in a Single Non-Destructive Measurement Process Using a Pulse Transmission Line Tester	13
<i>Julio Guillermo Zola, Juan Miguel Kelly</i>	
New Methodology for Differentiating Noisy Signals of Different Colours Using Geometric Features	17
<i>Manuel García Blesa, Juan Vorobioff, Walter Legnani</i>	
Catálogo-DI: SWRL Rules Definition that Conceptualize Instructional Design Methods for the Development of Learning Objects for Engineering Education.....	22
<i>Valeria Iliana Bertossi, Lucila Romero, María De Los Milagros Gutiérrez</i>	
Image Detection in Low-Quality Videos.....	30
<i>López De Luise Daniela, Benítez Micaela Antonella, Mencia Aramis Oscar, Park Jin Sung, Bordon Sbardella Felix Raul, Ríos Anahí Ailén, Hoferek Silvia, Fantín Rodrigo Iván, Ríos Emiliano Luis, Avila Lautaro Nicolás, Machado Gastón Emmanuel, Riveros Nahuel Edgardo</i>	
Monitoring of Water Surface Area Using Optical and SAOCOM SAR Data: A Case Study of the Nihuil Reservoir, Mendoza, Argentina	37
<i>Federico Machado, Romina Solorza, Sofía Teverovsky Korsic</i>	
Teaching Process Management with an Operating Systems Simulator: The UR-OS Experience.....	45
<i>Pedro Wightman</i>	
Using Spatial Diffusions for Optoacoustic Tomography Image Reconstruction	51
<i>Martín G. González, Matías Vera, Leonardo Rey Vega</i>	
Estimation of Vegetation Parameters of the VIC Model Using Remotely Sensed Data.....	59
<i>Edna Lucía Espinosa Gómez, Leticia Rodríguez, Erik Zimmermann</i>	
Low Coherence Interferometry to Generate Spatial Carriers	67
<i>Eneas N. Morel, Santiago Cerrotta, Jorge R. Torga</i>	
Control of a pH Neutralization Process Using Neural Network Approaches	70
<i>Diego Ortiz, Diego Valdiviezo, Danilo Chávez, Kleber Patiño, Pablo Proaño, Oscar Camacho</i>	
Gender Diversity in Cybersecurity: Gaps, Challenges, and Proposals	76
<i>Federico Pacheco</i>	
Malware Detection with AI	84
<i>Khalil Moriello, Hugo Scolnik</i>	
Instantaneous Complex Power Controller for a Grid-Tied Inverter Connected to an Unknown Grid.....	89
<i>Jorge A. Solsona, Sebastian Gomez Jorge, Claudio A. Busada, Gerardo Tapia-Otaegui, Ana Susperregui, M. Itsaso Martínez</i>	

Autocodificador Recurrente Para Detectar Fallas En Un Tren De Reactores De Polimerización	96
<i>Mariano M. Perdomo, Luis A. Clementi, Jorge R. Vega</i>	
Object Detection Algorithms Identifying Ceratitis Capitata Fruit Fly.....	104
<i>Carlos Medina-Ramos, Henrique De Aguiar-Minami, Daniel Carbonel-Olazabal, Jhon Zelada-Rodriguez, Michael Vera-Panez, Alonso Tenorio-Trigos</i>	
Genocchi Polynomials in Volterra Model to Identify Non-Linear Systems, Case of World Ocean Fishery	112
<i>Carlos Medina-Ramos, Daniel Carbonel-Olazabal, Judith Betetta-Gomez, Cornelio Gonzales-Torres</i>	
Remote Sensing Regression Models to Estimate Water Quality Indicators in Continental Waters in North-East Argentina.....	120
<i>Víctor Hugo Gauto, Enid Marta Utgés, Elsa Ivonne Hervot, María Daniela Tenev, Alejandro Fariás, Matías Bonansea, Anabella Ferral</i>	
Adaptive Sliding Mode Control with a PID Surface to Control a Nanopositioning System Actuated by Piezoelectric	126
<i>Alejandro Emmanuel Masante, Alejandro Emmanuel Masante, Rogelio Lorenzo Hecker, Miguel Edgardo Peña</i>	
Virtualizing Arc Fault and Thermal Test for Virtual Experiments and Digital Twins.....	134
<i>Matías A. Aguirre, Marcos E. Bierzychudek, Héctor M. Laiz</i>	
Indoor Tracking Based on Time Measures Under Mixed Propagation Conditions	140
<i>J. P. Grisales Campeón, P. I. Fierens</i>	
Shielding Angle Effectiveness Analysis on 220 kV and 500 kV Transmission Lines Against Lightning Strikes, Including Hillside Considerations.....	147
<i>William Gonzalo Flores Ruiz, Carlos Roberto Tapia Farfán</i>	
Cooperative Task Allocation for Multi-UAV Systems Based on ACO, A* and DWA	153
<i>Antônio Aguiar, Vandilberto Pinto, Lígia Sousa</i>	
Loading Effect Influence in Bandwidth Measurements for High Input Impedance Oscilloscopes	160
<i>Alejandro Henze, Hernando Silva</i>	
Application of LSTMs Recurrent Neural Networks to Characterize a Digitizer Using a Quantum Voltage Standard.....	168
<i>Guillermo Schneider, Mariano Real, Ricardo Iuzzolino</i>	
Speed Estimation in Induction Motor Starting Transient Using Wavelet Transform.....	173
<i>Lucas Puntano, Matias Meira, Cristian Ruschetti, Carlos J. Verucchi, Ricardo Lima</i>	
Speed Estimation Strategy During Three-Phase Induction Motor Starting Using Park Transform.....	180
<i>Sofía L. Antonelli, Lucas Puntano, Matias Meira, Pablo D. Donolo</i>	
Parameter Estimation of Induction Motor with Bioinspired Algorithms.....	187
<i>Sofía L. Antonelli, Pablo D. Donolo, Carlos M. Pezzani, Cristian H. De Angelo</i>	
Procedure for Assessing and Solving Electrical Power Quality Issues in Industrial Electrical	194
<i>Eliana Noriega Angarita, Vladimir Sousa Santos, Pablo Daniel Donolo, Carlos Martín Pezzani, Adriana Arango Manrique</i>	
Trade-Off Analysis for Attitude Control in Highly Elliptical Orbits	200
<i>Victor Canepa, Santiago Husain Cerruti, Pablo Servidía</i>	

Characterization of Land Subsidence in Ravenna Using Sentinel-1 InSAR and Geostatistics	208
<i>Celina A. Farias, Michelle Lenardón, Roberta Bonì, Francesca Cigna</i>	
A Comparison Between Tightly Coupled INS/GNSS Strategies for LEO Direct Ascent.....	216
<i>Víctor Cánepa, Pablo Servidía</i>	
Exploratory Analysis of Electric Demand Using Informational Tools	224
<i>Juan Luis Barbería, Lorenzo Licata Caruso, Giancarlo Lottero, Adrián Ezequiel Paglia, Sebastian Esanguí, Juan Facundo Fernandez Biancardi, Walter Edgardo Legnani</i>	
Tectonic: An Academic Cyber Range.....	230
<i>Guillermo Guerrero, Gustavo Betarte, Juan Diego Campo</i>	
Caracterización Térmica De Un Edificio De La Facultad De Ingeniería De La UNER a Partir De Simulaciones Con EnergyPlus.....	238
<i>Francisco J. Fernández, Renata Silvestri, Luis Ignacio Silva, Cristian H. De Angelo, Martín García</i>	
Spatio-Temporal Analysis of Fire Events Over the Past 10 Years in the Central-East Region of Argentina and Surrounding Areas	246
<i>Maria Fernanda Valle Seijo, Lidia Ana Otero, Rubén Darío Piacentini</i>	
Towards a Mixed Learning Strategy for Discovering New Gene Signatures in Breast Cancer Prognosis	254
<i>Cristhian Cola-Pilicita, Mateo Martínez-Mejía, Eduardo Alba, Yovani Marrero-Ponce, Noel Pérez-Pérez</i>	
Markov Process Applied to the Study of Turbulent Premixed Flames	260
<i>Sergio Elaskar, Pascal Bruel, Marcelo Frias</i>	
CII-GUIDE: A Guide for Addressing Cybersecurity Incidents in Critical Industrial Infrastructures	267
<i>Santiago Trigo, Hugo Curti, Gerardo González</i>	
Despeckling Filter Based on the Tsallis Entropy of the G_1^0 Distribution.....	274
<i>Andrea Rey, Juliana Gambini, Magdalena Lucini, Alejandro C. Frery</i>	
Machine Learning for Moisture Retrieval Using Landsat and SAOCOM Images	282
<i>Reiman Alfonso Azcuy, Virginia Venturini, Elisabet Walker, Enzo Ferrante</i>	
Transforming Engineering Education: Competencybased Solutions and a Student-Centered Approach to Increase Graduation Rate.....	288
<i>Maria Inés Pisarello, Paola Luciana Schlesinger, Marta Mabel Meza</i>	
Initial Wave Structure in a Blast Tube	294
<i>Lucas Monaldi, Luis Felipe Gutierrez Marcantoni, Sergio Elaskar</i>	
Influence of TVD Limiters on Wave Structure Produced by an Instantaneous Release of Energy Using OpenFOAM	302
<i>Lucas Monaldi, Luis Felipe Gutierrez Marcantoni, Sergio Elaskar</i>	
Development of Instabilities in Internal Structures Produced by an Explosions.....	310
<i>Lucas Monaldi, Luis Felipe Gutierrez Marcantoni, Sergio Elaskar</i>	
Design and Characterization of a Radiofrequency Applicator for Biomass Processing.....	318
<i>Matías Wamboldt, Julián Corach, Vicente Andrés Gajardo Narea, Patricio Sorichetti</i>	

X-Ray Computed Tomography for 3D Characterization of High-Frequency Standards	324
<i>Martin Musumano, Guillermo Monasterios</i>	
Study of Information Flow Among ECG Leads	329
<i>Julián Noziglia Sahores, Valeria Bank, Manuel Meijome, Ignacio Gabriel Ziccardi, Walter Edgardo Legnani</i>	
Scanning Electron Microscopy Applied to RF Primary Reference Standards.....	337
<i>Guillermo Monasterios, Martin Musumano, Jorge Campbell, Maria Soledad Pereda</i>	
Sensitivity Analysis of SEM Parameters for Dimensional Calibration of Coaxial Air Lines.....	343
<i>Martin Musumano, Guillermo Monasterios</i>	
Operational Crop Classification with Saocom L-Band Sar Images in the Pampas Region, Argentina	348
<i>Ignacio Pascual, Rodrigo Edrosa, Federico Machado, Marc Thiebault</i>	
Instrumentation and Automation System of a Vacuum Tube Solar Water Heater Based on Industry 4.0 Under Real Operating Conditions	355
<i>Josmell Henry Alva Alcántara, Elder Marino Mendoza Orbegoso, Jimmy Roger Silvera Otañe, Luis Alberto Julca Verástegui, Juan Carlos Bengoa Seminario, Carlos Bitner Corcuera Araujo</i>	
Feature Engineering Analysis for Predicting Cardiovascular Aging: An In-Silico Approach	363
<i>Ana P. Nuñez, Eugenia Ipar, Ricardo L. Armentano, Leandro J. Cymberknop</i>	
Fractional-Order PID Controller: A Tuning Evaluation Using Bio-Inspired Optimization Methods	370
<i>Marco Herrera, Diego S. Benítez, Noel Pérez-Pérez, Juan J. Gude, Luis Caiza, Oscar Camacho</i>	
Desarrollo De Un Sistema De Medición De La Permitividad Compleja En Alimentos Para Frecuencias De Microondas Mediante Parámetros S	377
<i>Alejandro Henze, Carolina Kupzovich, Rodolfo Mascheroni, Vanesa Zerpa, Patricia Della Roca, Javier Arballo</i>	
Exploring the Use of Deformable Detection Transformers for Breast Mass Detection.....	385
<i>Alejandro Duque, Camila Zambrano, Noel Pérez-Pérez, Diego Benítez, Felipe Grijalva, María Baldeon-Calisto</i>	
Assessing Prescribed Burn Severity in the Wetlands of the Paraná River Using Drone and Satellite Data	392
<i>Virginia Venturini, Elisabet Walker, Aylen Carrasco, Zuleica Yael Marchetti</i>	
Impact of Pulse Compression on Doppler Weather Radar Products.....	397
<i>Rocio Pérez Mirabal, Juan Pablo Pascual</i>	
Desempeño Hidrológico De La Precipitación GPMIMERG En Cuencas De Llanura.....	405
<i>Ana María Pinilla, Marcelo Uriburu Quirno</i>	
Evaluation of SWOT Water Surface Elevation Product Along the Middle Paraná River.....	411
<i>Cecilia López Weibel, Elisabet Walker, Ricardo Szupiany, Virginia Venturini, Joaquín Segura Ellis, Kevin Oberg, Carlos Marcelo García, José Manuel Diaz Lozada, Paula Zaffaroni, Esteban Jobbagy, Toby Minear</i>	
Detección Y Localización De Cortes En Redes De Distribución De Energía Eléctrica	416
<i>César González, Mauricio Samper, Jonh Morales</i>	

Towards a Deep Learning Based Approach for Semantic Segmentation of Coca-Leaf Growing Regions in Satellite Images of Perú.....	424
Rosario Medina Rodriguez, Jose C. Eche Llenque, Fedra Trujillano Asato, Julian Llanto Verde, Tullio W. Chavez Espiritu, Jose J. Pasapera Gonzales	
Assessing Long-Term Land Subsidence Hazard in Bologna City Using PSInSAR Data.....	430
Michelle Lenardón, Celina A. Farias, Francesca Cigna	
On the Use of YOLOv8 for Detection and Classification of Mammals Species in Wildlife Environments in the Ecuadorian Amazon	438
David Chamorro, Diego Benítez, Noel Pérez-Pérez, Daniel Riofrío, Felipe Grijalva, María Baldeon-Calisto	
Simultaneous Irradiation and Testing for Radiation Damage Evaluation in Actively Biased SiPMs and Other Devices	446
F. Suarez, J. Hulsmann, A. Lucero, C. Perrina, J. Frieden, A. Fernández Gomory, B. Glecer	
Robotic Arm Handling Based on Real-Time Recognition of the Number of Raised Fingers Using Convolutional Neural Networks.....	454
John Hidalgo-Abril, Diego S. Benítez, Noel Pérez-Pérez, Oscar Camacho, Felipe Grijalva, Marco Herrera	
Optimization of Patch Antennas Feeding Point for Circular Polarization Applying the Theory of Characteristic Modes	459
Patricio M. Gross, Juan Pablo Ciavardini, Julieta Z. Vernieri	
Robust IQ Imbalance Compensation for Free Space Optics Communications Links	465
Giovany Almeida Serra, Omar V. M. Lopez Cabrera, Leonardo Morbidel, Leonardo Ortiz, Manuel P. Fernandez, Pablo A. Costanzo Caso, Laureano A. Bulus Rossini	
Data Acquisition and Monitoring for Photovoltaic Plants Based on Low-Cost IoT Technologies.....	473
João Pedro Magalhaes De Lima, Lígia Maria Carvalho Sousa, Vandilberto Pereira Pinto, José Lucas Da Silva Pinheiro, Manuel Finda Evaristo	
Implementation of Tracking System for Yagi Uda Antenna in Satellite Ground Station.....	479
Gastón Peretti, Alejo Alesandria, Federico Beck, Sergio Felissia, Jorge Bossio, Daniel Musso	
Iterative Model for Solving the Rankine-Hugoniot Conditions in Calorically Imperfect Gas Mixtures	485
Marcelo Frias, Luis Gutiérrez Marcantoni, Sergio Elaskar	
Identification of Thermal Anomalies in Active Volcanoes Using Google Earth Engine and Multi-Spectral Satellite Images	491
Adonnis Rodriguez, Daniel Henriquez, Lizardo Arias, Carlos Pocasangre	
Identification of the Marine Coast Area Affected by Oil Spill Using Multispectral Satellite and UAV Images in Ventanilla - Callao, Perú	498
Jose C. Eche Llenque, Marco Miranda Valiente, Jose Carlos Coello Fababa, Lourdes Espinoza Quiroz, Mariela Caballero Del Castillo, Jose J. Pasapera Gonzales, Miriam Rodriguez Sanchez, German Marchand Lynes, Jesus Miguel Quintana Ortiz	
Fractional Order PID Control Applied to a Pasteurization Plant.....	505
Luis Caiza, Marco Herrera, Noel Pérez-Pérez, Fabricio Yépez, Diego S. Benítez, Oscar Camacho	

Learning Quadrupedal Motion Through Multi-Objective Soft Actor-Critic	510
<i>Alejo Domínguez Nimo, Joaquín Mariano Piñeiro, Javier Esarte, Pablo Daniel Folino, Sergio Alberino</i>	
Effect Sizes as a Statistical Feature-Selector-Based Learning to Detect Breast Cancer.....	518
<i>Nicolás Masino, Antonio Quintero-Rincón</i>	
Analysis of Electrical Risks by Electromagnetic Induction on Parallel High Voltage Overhead Transmission Lines.....	525
<i>William Gonzalo Flores Ruiz, Carlos Roberto Tapia Farfán</i>	
Mapping Arterial Waveform Fractality: A Comparative Analysis Between Fractal and Gold-Standard Vascular Health Metrics in Multiple Arterial Sites.....	531
<i>Eugenio Ipar, Leandro J. Cymberknop, Walter Legnani, Ricardo L. Armentano</i>	
Design to Eliminate Frequency Bifurcation in Transformers for Wireless Charging of Electric Vehicles	539
<i>Frank Martínez Batista, Facundo Aguilera, Christian Buzzio, Cristian H. De Angelo, Germán G. Oggier</i>	
Designing Artificial Intelligence with Privacy at the Center	546
<i>Fabián Descalzo</i>	
Towards a Holistic Cybersecurity Framework for e-Governments	550
<i>Víctor Figueroa, Luis E. Sánchez, Antonio Santos-Olmo, David G. Rosado, Eduardo Fernández-Medina</i>	
Analytical Calculation of Spatial Harmonics of Winding Functions for Induction Machines	558
<i>Marcelo Poncio, Guillermo Bossio, Pablo De La Barrera, Cristian Falco, Eduardo Amaya</i>	
A Comparative Study of Fractional PID and Integer PID: Experimental Test Results on a Thermal Process.....	566
<i>Dylan Puyol, Diego S. Benítez, Noel Pérez-Pérez, Fabricio Yépez, Marco Herrera, Oscar Camacho</i>	
Design of an Isolated Driver Module for Converters with Floating Transistors.....	573
<i>Gerónimo González Marino, Santiago Andrés Verne</i>	
Advanced Variable Tuning and Biases in Chatbot Models: Analysis of the PT AH Prototype	581
<i>María Daniela López De Luise, Andrés Pascal, Sebastián Trossero, Claudia Alvarez, Fernando Heit</i>	
Evaluation of the Response of Vegetation Covers to PolSAR Decomposition Variables in L - Band.....	587
<i>María Paula Alvarez, Luna Emilce Silvetti, Julieta Rocío Arcamone, Gregorio Gavier Pizarro, Laura Marisa Bellis</i>	
Performance Assessment of LoRaWAN DtS-IoT Networks: Operation Modes and Server Placement	593
<i>Germán L. Scapin, Guido Alvarez, Nicolás Quiroga, Federico Collado, Juan A. Fraire</i>	
Feature Selection that Defines the Performance of University Students in the Use of LMS Platforms Applying Machine Learning Algorithms.....	601
<i>Diana María Robayo-Botiva, Argelia B. Urbina-Nájera</i>	
Current and Future Panorama of Quantum and Post-Quantum Cryptography	609
<i>Mendilaharzu Claudio, Figueiras Fernando</i>	

Detection of Stator Faults in Induction Motors Using Pole Voltages	613
<i>Guillermo R. Bossio, José M. Bossio, Manuel A. Mazzoletti, Pablo D. Donolo, Carlos M. Pezzani, Cristian H. De Angelo</i>	
Transformer Leakage Inductance Estimation with Windings Radial Displacement.....	619
<i>Lucas Puntano, Carlos J. Verucchi, Matias Meira, Cristian Ruschetti, Raúl E. Álvarez</i>	
Validation of Saocom-Estimated Soil Dielectric Constant Using a Bayesian Inference Scheme in Agricultural Fields.....	627
<i>Javier Arellana, Mariano Franco, Francisco Grings</i>	
Electrooculogram as a Communication Alternative for People with Different Abilities.....	630
<i>J. A. Sarao Sánchez, M. R. Ruiz Pinto, M. A. Ulin Mena, H. A. Vázquez Guillen, A. S. Garrido Villarreal, R. Nava Martínez</i>	
Sleep Apnea Detection with Neural Networks	634
<i>Lara Ochagavia, Lucas A. Ferreyra, Ricardo A. Veiga, Marcela Viviana Smurra, Ramiro Rojas Mendiola, Washington O. Jáuregui</i>	
Ambulatory Electrocardiographic Monitoring Prototype.....	642
<i>Lucas Maximiliano Alegre, María Inés Pisarello</i>	
Reinforcement Learning Adjustment of Conventional Insulin Therapy for People with Type 1 Diabetes.....	648
<i>Maria Cecilia Serafini, Emilia Fushimi, Fabricio Garelli</i>	
Data-Driven Methods for Daily Glucose Prediction in People with Type 1 Diabetes.....	654
<i>Marcos David Saavedra, Fernando A. Inthamoussou, Fabricio Garelli</i>	
Estimation of Torque Exerted by Cyclists on Electric Bicycles with Pedal Assist Using Disturbance Observer	662
<i>Alexander González Medina, Diego A. Aligia, Cristian H. De Angelo, Guillermo N. González</i>	
Multidisciplinary Strategy in Final Computer Science Projects to Increase Graduation.....	669
<i>Carlos Fontela, Pablo Andrés Deymonnaz, Hernán Merlino</i>	
Snell's Law: Ultra-Concurrent Laboratory for Telecommunications Engineering	676
<i>José Roberto Santamaría-Sandoval, Silvia Patricia Fallas-Monge, Fiorella Lizano-Sánchez, Ignacio Idoyaga, Carlos Arguedas-Matarrita</i>	
Application Self-Protection and Its Use in SCADA Systems in Critical Infrastructures: A Systematic Mapping of the Literature	683
<i>Daniel Arnaldo Manrique, Carlos Neil, Jorge Kamlobsky</i>	
A Reasoning-Based Hyper-Heuristic Model for Reliability Optimization in Medium Voltage Power Distribution Systems	688
<i>Gustavo Schweickardt, Cesar Bucci</i>	
Identifying Duplicate Customer Records Using Blocking and Supervised Learning Techniques.....	696
<i>Alexis Walker, J. Andrés Diaz-Pace, Fernanda Mendez</i>	
GPS-Based Real-Time LEO Satellite Navigation Using Kinematic and Reduced Dynamic Filtering Approaches.....	703
<i>Ernesto M. López, Jorge Cogo, Carlos H. Muravchik</i>	
The Effect of Modeling Clock Dynamics on Kalman Filter Based GNSS Signal Tracking.....	710
<i>J. Fermín Llorente, Javier A. Smidt, Pedro A. Roncagliolo</i>	

Towards a Hands-On Lab: SISO Plants for Introductory Courses in Automatic Control.....	718
<i>Claudio Pose, Ezequiel Pecker-Marcosig</i>	
Construction of a Signal Generator: Distance Laboratory.....	726
<i>Silvia Patricia Fallas Monge, José Roberto Santamaría Sandoval</i>	
Architecture of a Fault-Tolerant Navigation, Guidance and Control Computer.....	733
<i>Federico Nuñez Frau, Leonardo Garberoglio, Claudio Pose, Juan Giribet</i>	
Efficient Endangered Deer Species Monitoring with UAV Aerial Imagery and Deep Learning.....	741
<i>Agustín Roca, Gabriel Torre, Juan I. Giribet, Gastón Castro, Leonardo Colombo, Ignacio Mas, Javier Pereira</i>	
Soil Moisture: Analysis of SMAP Satellite Products in Plain Zones.....	749
<i>María Florencia Degano, Sabrina Beninato, Mauro Ezequiel Holzman, Martín Ignacio Bayala, Raúl Eduardo Rivas, Christian Massari</i>	
A Predictive Deep Learning Model to Estimate the Power Generated by a Photovoltaic Plant.....	757
<i>Leticia M. Seijas, Sergio A. González, Lorenzo Marinucci, Lucía L. Palomeque</i>	
Numerical Optimization for the Simulation of Radio Occultation Events	765
<i>Arian Saggese, Santiago Ozafraín, Ernesto Mauro Lopez</i>	
Collaborative Robot Mapping Via Frequent Encounter-Based Fusion.....	771
<i>Martin Nievas, Claudio Jose Paz, Araguas Gastón</i>	
SNR Estimation in Wireless Control Systems for Electrical Microgrids Using Wavelet Neural Networks	777
<i>Jaime Santiago Berrios Maturana, Facundo Aguilera, Germán Gustavo Oggier</i>	
CONAE Argentine Airborne L-Band SAR System.....	784
<i>Ricardo Daniel Pafundi, Pablo C. Marino Belcaguy, Sergio Masuelli, Sandra Torrusio, Leonardo Comes, Marcelo Colazo</i>	
Spurious Photon States at the Quantum Harmonic Oscillator with Glauber-Bessel Hamiltonian.....	791
<i>Huber Nieto-Chaupis</i>	
Modeling Transport of Ca ²⁺ in Neural Synapse with Boltzmann Equation and Electrodynamics	796
<i>Huber Nieto-Chaupis</i>	
Global Pandemics Dictated by Noncommutative Algebra	801
<i>Huber Nieto-Chaupis</i>	
Theory and Simulation of Perceptron Through Quantum Mechanics Formalism	806
<i>Huber Nieto-Chaupis</i>	
2DOF-PID Adaptive Gain-Scheduling Control for Nonlinear Process with Dominant Delay.....	812
<i>Mauricio Soria, Diego Benítez, Oscar Camacho</i>	
The Impact of Delays in Actuators and Transmitters on Control System Performance	818
<i>Jimmy Alarcón, Marco Herrera, Diego S. Benítez, Omar Aguirre, Hugo Leiva, Oscar Camacho</i>	
Characterization of Cryopreserved and Lyophilized Amniotic Membrane Allograft.....	825
<i>Lacerra Carolina, Rodrigo Neis, Mariana Cid, Romina Comín, Andrea Cragnolini, Rosanna Piscitello, Raúl Ibarra Theiler, Santiago Villanueva, Diego Schmets, Tristán López Lozano, Cecilia Sobrero, Nancy Salvatierra</i>	

Urban Risk Maps Associated with the Heat Island Phenomenon in the Metropolitan Area of Córdoba	830
<i>Lucas G. Vanoli Faustinelli, Giuliana Beltramone, Anabella Ferral, Candelaria Dedeu, Felicitas Soria, Diego Pons</i>	
Liquid Level Control Using a Variable Parameter Fuzzy Controller.....	838
<i>José Luis Chango, José Jumbo, Luis Morales</i>	
Citocompatibility Assessment of 3D-Printed Collagen Scaffolds with Hyaluronic Acid Crosslinked with Genipin, Dehydrothermal Treatment, and 1-Ethyl-3-(3-Dimethylaminopropyl) Carbodiimide and N-Hydroxysuccinimide.....	844
<i>Pablo Andrés Fernández, Romina Comín, Juan Pablo Real, Nancy Salvatierra, Mariana Cid</i>	
Spatial Calculation of the Barley Green Water Footprint in Southeastern Buenos Aires Province	849
<i>Paula Olivera Rodríguez, Mauro Holzman, Guadalupe Ares, Francisco Diez, Cristian Laino Baldini</i>	
A Test for the Systematic Detection of Bowtie Effect and Stripping on the Edges of MODIS Images.....	855
<i>Paula Verónica Romero Jure, Sergio Masuelli, Juan Bautista Cabral</i>	
An Educational CubeSat Mission for Detecting Algae Blooming in Coastal and Inland Water Bodies.....	861
<i>Raul Rubio, Matías Olmedo, Alba German, Mayco Dagatti, Guido Alvarez, Carlos Barrientos</i>	
Automatic Gain Control on FPGA for Multi-Antenna GNSS Receivers	869
<i>Juan Gabriel Díaz</i>	
Development of a Braille Self-Learning Device with Voice Recognition and Letter Control by Encoder and Solenoid.....	876
<i>Jorge Alejandro Chávez Gómez, María Fernanda Monterrubio Antonio, Emiliano Martínez Vargas, Mario Tadeo Caballero Córdova, Gabriel Rivero Gómez</i>	
Universal Bias Controller Testbed for DP-IQ Modulators in Coherent Optical Links	882
<i>Omar V. M. Lopez Cabrera, Giovany Almeida Serra, Leonardo Morbidel, Leonardo Ortiz, Manuel P. Fernandez, Laureano A. Bulus Rossini, Pablo A. Costanzo Caso</i>	
Badges as a Gamification Tool in Higher Education Through Tokenization.....	889
<i>Brenno Araujo Queiroz, Johann Westphall, Jean Everson Martina</i>	
Theory and Testing of Bayesian Handover.....	895
<i>Huber Nieto-Chaupis</i>	
Work in Progress: Baseband Arbitrary Function Generator Integrated with GNU Radio	900
<i>Marcelo R. Doallo, Leandro N. Bottinelli, Liam Duggan, Facundo Repetto</i>	
Field Measurements at an Important Steelworks and Development of a ±250 Mvar Static Reactive Compensator (SVC) Model.....	907
<i>Fernando Issouribehere, Pablo Leibovich, Gastón Mayer, Gustavo Barbera, Pedro Issouribehere, Juan Barbero</i>	
Work in Progress: Automatic Satellite Image Receiver System for NOAA Weather Satellites.....	915
<i>Marcelo R. Doallo, Gaston Peretti, Felipe Nirino, Elian Andrenacci, Alejo S. Alesandria</i>	
Technology and Trends for Flexible Operation in Energy Power Systems	921
<i>Alex Ayo, Gastón Suvire, Rolando Pringles, Gerardo Blanco</i>	

Five Standards Model in Information Security Management Systems and Business Continuity.....	929
<i>Sliafertas Matías Nicolás, García Marcelo Adrián</i>	
Cibersecurity and Academia.....	937
<i>Juan Heguiabehere, Marcela Pallero</i>	
Potencial De La Banda L Para Estimar Rendimiento En Cultivos De Vid.....	941
<i>Matías Barber, Julieta Dalmasso, Facundo Carmona, Martín Ignacio Bayala, Christian Mancino, María Florencia Degano, Inés Del Valle Asís, Raúl Rivas</i>	
Damage Clasification in Composite Materials Using Neural Networks	945
<i>Carlos E. Tais, Juan M. Fontana, Leonardo Molisani, Ronald O'Brien, Yolanda Ballesteros, Juan C. Del Real Romero</i>	
Embedded Deployment for Real-Time Road Sign Detection and Identification.....	951
<i>Xavier Casanova, Alberto Sánchez, Pablo F. Dávila</i>	
Strategy for Detecting Island Operation Mode of Three-Phase Four-Wire Microgrids.....	959
<i>Celso Leonel Safont Gómez, Germán Elías Oggier, Germán Gustavo Oggier</i>	
Characterization of Native Vegetation Cover in the Serrano Chaco District Based on Field Data and Spectral Signatures	967
<i>Juan Pablo Zbrun Luoni, Mariela Aguilera Sanmaritano, Facundo Reynoso, Francisco Nemiña, Edgar Torres</i>	
Broadband Complex Permittivity Sensor for Liquids	972
<i>Vicente Gajardo, Julián Corach, Eriel Fernández, Celene Casati, Ligia Ciocci, Patricio Sorichetti</i>	
Desarrollo De Laboratorio Remoto Para Banco De Pruebas De Motores Eléctricos: Una Herramienta Innovadora Para La Educación En Ingeniería	977
<i>Walter Aguilera, Susana Doque, José Baldini, Diego Santon</i>	
Metrics for the Evaluation of Optimization Methods in Dynamic Problems: Application to Vehicle Routing Using Ant Systems.....	981
<i>Lucas Martín Prado, Tobias Grandi, Carlos Casanova Pietroboni</i>	
Implementation of an Initial Rotor Position Estimation for PMSM Drives Based on High Frequency Voltage Signal Injection.....	989
<i>Pedro A. Pico, Diego A. Aligia, Cristian H. De Angelo, Cristian E. Escudero</i>	
Diseño De Estructuras De Control Basadas En Combinaciones Lineales De Variables Para La Regulación Tensión En Redes De Distribución Activas.....	997
<i>Pablo G. Rullo, Patricio A. Luppi, Lautaro Braccia, Maximiliano García, Diego Feroldi, David Zumoffen</i>	
Towards a Semantic Sensor Spectral Data Framework: A Case for In-Situ Water Spectroradiometry	1003
<i>Fernando Roda, Pablo Zader, Ivanna Tropper, Francisco Nemiña, Jorge Rubio, Marcelo Scavuzzo, Anabella Ferral</i>	
Automated Detection of Oceanic Slicks with SAOCOM Near Mar Del Plata's Shoreline	1011
<i>Cristhian Escobares, Elisa Frank Buss, Jorge Rubio, Carolina Tauro, Anabella Ferral</i>	
Reflectometry with Galileo Signals: Ocean and Amazon Basin Events from CYGNSS	1019
<i>Dante C. Andrinolo O., Santiago Ozafraín</i>	

Soil Moisture Estimation in the Argentinian Pampas Using Data Assimilation of SMAP and SMOS Retrievals.....	1026
<i>Fabricio Matías Obregón, Manuel Pulido, Magdalena Lucini</i>	
Modelling of Phosphorus and Nitrogen Delivery in a Strategic River Basin	1034
<i>Sofía Paná, Matías Bonansea, Vera Camacho Valdés, Inés Del Valle Asís, Víctor Hugo Gauto, Anabella Ferral</i>	
Isoform Discovery in Long-Read Sequencing: Tuning Computational Pipeline.....	1040
<i>Natalia Iglesias, Ignacio García Labari, Flavio Spetale, Sergio Ponce, Elizabeth Tapia, Pilar Bulacio</i>	
Evaluación Preliminar De Productos De Swot Para Determinar La Elevación De La Superficie De Agua De Lagos Y Lagunas De La Provincia De Córdoba Argentina	1045
<i>Joaquín S. Segura Ellis, Paula Zaffaroni, Carlos Marcelo García, José Manuel Díaz Lozada, Kevin Oberg, Esteban Jobbagy, Cecilia López Weibel, Elisabet Walker, Ricardo Szupiany, Virginia Venturini, Toby Minear</i>	
Performance Evaluation of Satellite Temporal Aggregation Methods and Sample Size Training Data for Crop Mapping	1051
<i>Miguel Nolasco, Mario Agustín Sgró, Pablo Zader, Elisa Frank Buss, Jorge Rubio, Marcelo Scavuzzo</i>	
Tlaotic: Blockchain-Based Digital Ballot Box Compatible with Mexican Electoral Processes	1058
<i>Isaac Alejandro Rivera Barrón, David Flores Escalona, Eleazar Aguirre Anaya, Gina Gallegos García</i>	
Grounding in a Substation	1066
<i>Germán Rubbo, Beatriz Barbieri, Carlos Wall, V. Fabián Corasaniti, Gastón Mayer, Guido Serafíni</i>	
Frequency Domain Test Scheme of a Current Source for Nuclear Magnetic Resonance.....	1071
<i>Agustín Laprovitta, María Delfina Vélez Ibarra, Gonzalo Tomás Vodanovic, Gabriela Marta Peretti, Eduardo Romero, Esteban Anoardo</i>	
Characterization of Vineyard Training Systems Based on Remote Sensing and Crop Indices.....	1078
<i>Flavio Capraro, Daniela Pacheco, Pedro Campillo</i>	
Applications of Geographic Information Systems in Food Environments and Cardiometabolic Diseases: A Systematic Review	1085
<i>Micaela Natalia Campero, Carlos Matías Scavuzzo, Rosana Elizabeth Maidana, Ximena Porcasi, María Daniela Defagó</i>	
Predictive Model of the Climate Change Impact on Low Birth Weight, a Methodological Approach in Argentina	1093
<i>Micaela Natalia Campero, Carlos Matías Scavuzzo, Carla Rodríguez González, Mario Agustín Sgro, María Dolores Román, Carlos Marcelo Scavuzzo</i>	
Development of a Protocol for Verification Test on Critical Care Ventilators.....	1099
<i>Ana Luz Treo, Raúl Romo, Gonzalo Quiroga, Adrián Guasberti, Cintia Belén Pérez</i>	
Implementation of Post-Quantum Cryptographic Libraries on ARM Architectures	1104
<i>Kevin A. Delgado-Vargas, Cuauhtemoc Mancillas Lopez, Gina Gallegos-García</i>	
Web-Based Medical Image Repositories: Characterization and Searching	1108
<i>Daniela Pedrozo, Juan Pablo Graffigna, Emanuel Tello, Elisa Perez, Virginia Ballarin</i>	

Taxonomy of Personal Data for Public Organizations in Mexico	1116
<i>Sara De Jesús Sánchez, Eleazar Aguirre Anaya, Hiram Calvo, Claudia Alin Escoto Velázquez</i>	
Transformer-Based Refinement of Pseudoknot Predictions in RNA Secondary Structures	1123
<i>Ignacio García Labari, Alejandro Flores Lamas, Flavio E. Spetale, Pilar Bulacio, Elizabeth Tapia</i>	
Detection and Identification of Diaphorina Citri Through Neural Networks in Tucumán-Argentina	1128
<i>N/A</i>	
Multi-Site Photoplethysmography Applied to Arterial Systemic Network Mapping: nFISIO Platform.....	1134
<i>Martín A. De Luca, Nicolás Landioni, Ricardo L. Armentano, Leandro J. Cymberknop</i>	
Implementation of Ground Based Synthetic Aperture Radar Applying Agile Methodology.....	1139
<i>Milena Abril Ruiz Benítez, Enzo Germán Garabito Orosco, Lucas Martín Contreras Soto, Manuel Elías García Redondo, Alejandro Almela</i>	
On the Design of an AI Enabled Edge Workplace Environment Monitoring Station.....	1146
<i>Esteban Almeida, Diego Sandoval, Alberto Sánchez, Pablo F. Dávila</i>	
Protection Location in Distribution Networks Using Particle Swarm Optimization.....	1153
<i>Ariel S. Loyarte, Ulises Manassero, Carlos I. Sanseverinatti, Lautaro D. Rossi</i>	
Electromagnetic Field Analysis in 132kV Double-Circuit Transmission Lines with ACCC Conductors.....	1161
<i>Matias A. Arntzen, Roberto J. Cabral, Mario O. Oliveira, Matias E. Yasnikowski, Angel P. Quintana</i>	
DBF Radar: A Digital Beam-Forming Radar System for Technology Research.....	1167
<i>Mayco M. Dagatti, Pablo C. Marino Belçaguy</i>	
Proposal and Validation of Energy Indicators on University Campus.....	1173
<i>Daniel Cabrera Díaz, Martín S. García, Luis I. Silva</i>	
Minimum Parameters for Design and Implementation of Adaptive Cybersecurity Courses	1179
<i>Federico Pacheco, Matías Sliafertas</i>	
Portable Device for Diagnosing Computer Networks	1187
<i>Nicolas Antonielli</i>	
Real Random Number Generator Hardware by Quantum Decay.....	1194
<i>J. M. Beltran</i>	
Modelado Y Simulación De Un Cuerpo Dec Siembra Con Suspensión Pasiva Por Resortes	1202
<i>Luis I. Silva, Luis E. Venghi, Martin S. García</i>	
Impact of the Inverter Sizing in Photovoltaic Systems Considering Solar Irradiance Characteristics	1209
<i>Luis I. Silva, Agustín G. Bucciarelli</i>	
Evaluación Del Criterio De Diseño De Plantas Fotovoltaicas Instaladas En Un Campus Universitario	1214
<i>Martin S. García, Luis I. Silva, Daniel Cabrera Díaz, Francisco J. Fernández</i>	
Learning Geomatics, Online? DUGA* Gulich Institute Case of Study	1219
<i>Almendra Brasca Merlin, Rodrigo Molina, Matías López, Mariela Sammaritano</i>	

Assessment of Arterial Stiffness Using Radial Artery Diameter Variation Signals	1226
<i>Nicolás Alonso, Gustavo Javier Meschino, Fabricio Basso, Leandro Zabala, Lucía Isabel Passoni</i>	
Direct RF Sampling Receiver Front-End for a Ground Station Based on an Antenna Array	1232
<i>Nicolás E. Catalano, Alejandro J. Venere, Juan P. Pascual</i>	
A Simple Microwave Power Combining Amplifier with Enhanced Linearity and High Out-Of-Band Rejection.....	1239
<i>Francisco Núñez, Ramón López La Valle, Simón Lombardozzo</i>	
Diagnosis of Coexisting Broken Rotor Bars and Mixed Eccentricity in Induction Motors by Instantaneous Power Analysis	1244
<i>Ariel Castellino, Pablo Donolo, Martín Pezzani, Guillermo Bossio, Cristian De Angelo</i>	
Project-Based Learning in Cybersecurity: Methodologies and Scope.....	1252
<i>Hugo Pagola, Hernan Merlino, Diego Mazzoni, Pablo Peiretti</i>	
Generation of a Synthesized Database Based on Real Data for Vascular Age Estimation Through a Machine Learning Approach	1260
<i>I. Abal, R. Canaglia, E. Ipar, R. L. Armentano, L. J. Cymberknop</i>	
Development and Implementation of a Verification Protocol for Regulatory Compliance of Electrical Systems in Critical Hospital Areas	1264
<i>Diego Nicolas Santoni, Mario Orlando Blume, Débora Rubio, Federico Conte, Sergio D Ponce</i>	
Systems and Network Security with eBPF	1270
<i>Santiago Nicolau, Juan Carlos Hernández, Marcelo Arroyo</i>	
CROZONO Cibercrime Investigation and Security Evaluation Framework: Investigación Remota Digital Con Drones.....	1278
<i>Pablo Romanos, Ana Martínez Saucedo, Demián Benítez</i>	
Prospective Healthcare Systems for AI in Well-Being	1287
<i>Daniela López De Luise, Delfina Gallardo, Sebastian Cippitelli</i>	
LUMIERE: A Digital Artist of Feelings	1291
<i>Daniela López De Luise, Felix Vanni Duvergel Chapman, Fernando Furundarena</i>	

Author Index