

2022 IEEE Engineering International Research Conference (EIRCON 2022)

**Lima, Peru
26 – 28 October 2022**



**IEEE Catalog Number: CFP22Y79-POD
ISBN: 978-1-6654-5083-6**

**Copyright © 2022 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:	CFP22Y79-POD
ISBN (Print-On-Demand):	978-1-6654-5083-6
ISBN (Online):	978-1-6654-5082-9

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

IoT Edge Device to Estimate Breathing Rate from ECG Signal for Continuous Monitoring	1
<i>Ricardo Yauri</i>	
Mechatronic Design and Kinematic Analysis of Land-Based, Holonomic-Type and Mecanum- Wheeled Mobile Robot for Queue Management in Supermarkets	5
<i>Alberto Ari, Alexander Rojas, José Cornejo, Ricardo Palomares</i>	
Open-Source Game Engine & Framework for 2D Game Development.....	9
<i>Sergio Alejandro Espinal Campos, Bryan Antony Miramira Morales, Angel Augusto Velásquez Núñez</i>	
Boxing: A Blockchain Based Voting System.....	13
<i>Lizama Paredes Enzo, Guadalupe Medina Rodrigo, Flores Moroco Juan</i>	
Framework for Automating Requirement Elicitation Using a Chatbot	17
<i>Luis Kcomt Lam, Cesar Andres Lopez Hurtado, Lenis Wong Portillo</i>	
Framework Integrating RUP, Scrum and ISO 9126 to Improve Quality During Software Construction in SMEs.....	21
<i>André Salazar Jo, Christian Ovalle</i>	
Mechatronic Design and Kinematic Analysis of 8 DOF Serial Robot Manipulator to Perform Electrostatic Spray Painting Process on Electrical Panels	25
<i>Jhonatan Huanca, José Zamora, José Cornejo, Ricardo Palomares</i>	
Proposal of a Mobile Application Using the Mobile-D Methodology to Support the Type 2 Diabetes Control Process in a Hospital in Trujillo	29
<i>Germán Villavicencio Villanueva, Rolando Javier Berrú Beltrán, Rómulo Rogery Vargas García</i>	
Electronic Generator of Braille Code (EGBC) to Improve the Educational Inclusion of Visually Disability People in an Educational Center in Trujillo.....	33
<i>Luis José Vargas León, Rolando Javier Berrú Beltrán</i>	
Characterization of New Foundations Applied in Overhead Lines	37
<i>Ricardo Manuel Arias Velásquez, Felipa Elvira Muñoz Ccuro</i>	
Oscillation and Model of the Reclosure Function in Overhead Lines of 220kV and 500kV	41
<i>Ricardo Manuel Arias Velásquez, Felipa Elvira Muñoz Ccuro, Jennifer Vanessa Mejía Lara</i>	
Model to Identify the Profile of Countermeasures for Information Leakage in Financial Organizations.....	45
<i>Harry Zarría Burga, Belther Lecca Revilla, Daniel Burga Durango</i>	
Variability and Wave Power for Open Ocean Wave Conditions of the Peru Basin	49
<i>Dennys De La Torre, Arturo Ortega</i>	
Applicability of the Standard Sea Spectrums and New Calibration Coefficients for the Wave Energy Period Calculation of the Peru Sea Basin.....	53
<i>Dennys De La Torre, Arturo Ortega</i>	

Mobile Application to Enhance the Distribution of Tourist Information on Beaches in La Libertad Region	57
<i>Ever Yuri Vivar Velásquez, Rolando Javier Berrú Beltrán</i>	
Proposal of Virtual Reality Solution Using Photogrammetry Techniques to Enhance the Heritage Promotion in a Tourist Center of Trujillo	61
<i>Renato Andree León Tejada, Jorge Alexander Jimenez Azabache, Rolando Javier Berrú Beltrán</i>	
An Experimental Evaluation of RSSI-LoRa in an Olive Tree Plantations	65
<i>Darwin Auccapuri Quispetupa, Juan Paco Fernandez, River Quispe Tacas</i>	
Architecture Proposal for Real-Time Sensor Monitoring Using IoT and Augmented Reality	69
<i>Juan Tisza, David Ortega</i>	
Wiener Model Identification of a pH Plant with ELM	73
<i>Irene Alvarado, William Ipanaqué</i>	
Design of a People Access Control System Using the ESP32 Module and Internet of Things for a Sanitary Facility in a Shopping Mall	77
<i>Haggi Casas Sanchez, Jean Loayza Apeña, Joel Palomino, Ernesto Paiva-Peredo</i>	
Methodology for Metal Oxide Varistor Design Applied to Fixed Series Capacitor	81
<i>Ricardo Manuel Arias Velásquez, Felipa Elvira Muñoz Ccuro, Jennifer Vanessa Mejía Lara</i>	
Determination of the Maximum Degree of Inclination of the Straight Columns of a 4-Story Building Based on Its Seismic Behavior, Cajamarca, 2020	85
<i>Huaman Pajares Félix Armando, Rimarachin Mosquera Virgilio, Ruben Kevin Manturano Chipana, Neicer Campos Vasquez</i>	
Churn Classification: An Exploration of Features to Improve the Performance	89
<i>Pedro Shiguihara, Javier Dioses</i>	
Expert Systems and Administration of Justice in Peru and Brazil	93
<i>Yasmina Riega-Virú, Mario Ninaquispe Soto, Juan Luis Salas-Riega, Joselyn Arellano Arizola Bach</i>	
Analysis of Internet Service Latency and Its Impact on Internet of Things (IoT) Applications	97
<i>Luis Mostacero-Agama, Pedro Shiguihara</i>	
Implementation of a Web-Based Interface for Remote Access to a FPGA Board	101
<i>Daniel Abanto, Vicky Carazas, Javier Solis-Lastra, Cándido Aramburu</i>	
DC Brushless Motor Speed Controller Design Using Back Electromotive Force	105
<i>Javier Martin Seminario Gastelo, Edilberto Horacio Vásquez Díaz</i>	
Comparative Analysis of Photovoltaic Energy Production in the Dry and Rainy Seasons: High Altitude Case Study	109
<i>Elmer Rodrigo Aquino Larico, José Manuel Ramos Cutipa, Leonidas Vilca Callata, Roberto Jaime Quiroz Sosa</i>	
Story Visualization Using Image-Text Matching Architecture for Digital Storytelling	113
<i>Arian Yturizaga-Aguirre, Camilo Silva-Olivares, Willy Ugarte</i>	
Roadmap of Projects for the Design of Clothing with Wearable Technology	117
<i>Graciela Sánchez, Cristian Castro, David Mauricio</i>	

Maneuverable Reentry Vehicle Trajectory Optimization Using Pseudospectral Method 121
Fredy M. Villanueva

CNN for the Detection of COVID-19 from Chest X-Ray Images..... 125
Ruben Florez, Yesenia Concha-Ramos, Facundo Palomino-Quispe, Roger Jesus Coaquira-Castillo

Design of a Neural Network Function Block for Insertion into the Function Block Library of a Programmable Logic Controller 129
Armando Fermín-Pérez, Enrique Sebastián, Jesús Sullcarayme

Author Index