2023 Symposium on Internet of Things (SIoT 2023)

Sao Paulo, Brazil
25-27 October 2023

IEEE Catalog Number: CFP23DZ8-POD
ISBN: 979-8-3503-2944-5

Copyright © 2023 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:	CFP23DZ8-POD
ISBN (Print-On-Demand):	979-8-3503-2944-5
ISBN (Online):	979-8-3503-2943-8

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

2023 Symposium on Internet of Things (SIoT)

ANDRADE, Matheus; WANDERLEY, Esther. AZEVEDO, Mariana; MEDEIROS, Thais; SILVA, Marianne*; SILVA, Ivanovitch; COSTA Daniel G - **A Voice-assisted Approach for Vehicular Data Querying from Automotive IoT-based Databases.....1**

MEDEIROS, Morsinaldo; AZEVEDO, Mariana; AMARAL, Miguel; VIEGAS, Carlos; SILVAA, Marianne*; SILVA, Ivanovitch; COSTA, Daniel G - **A Framework for Efficient Communication in IoT Applications in the Automotive Industry with OBD-II Edge.....6**

Augusto GOMES; Max SANYA; Sumaé Embaló; Johnson MENSAH; Ivan Silva dos Santos; Sabi Yari Moïse BANDIRI* - **Internet of Energy Applications for the Brazilian Energy System.....11**

NOGUEIRA, Bruno C*; MOTTA, Rebeca; DELICATO, Flávia; BATISTA, Thais - **Self-Adaptation in IoT Systems for Smart Cities.....16**

COUTINHO, Vítor A; SIPKOI, Gabor; RUFINO, Cristóvão Zuppardo Rufino; José R de Oliveira Neto* - **Hardware-Based Acceleration of an Approximate 2D DCT for a System-on-Chip.....21**

FILOMENO, Mateus L*; CAMPOS, Gustavo Moraes; CAMPONOGARA, Ândrei; SARTORELLO, Pedro; RIBEIRO, Moises V - **Artificial Noise for In-Home PLC Networks Under the Presence of PLC and Wireless Eavesdroppers.....26**

MOREIRA, Túlio F*; FILOMENO, Mateus L; MARTINS, Wallace; RIBEIRO, Moises V - **A Frequency Division Modulation for CSS-based Communication Systems: An Initial Discussion.....31**

REVOREDO, Téo C*; AZAMBUJA, Heitor - **A low cost open-source energy monitoring and control system for smart homes.....36**

Vitor Marques de Castro*; João Henrique Kleinschmidt - **Using Fog Computing for Bike-Sharing Systems.....41**

MONTEIRO, Waldomiro J*; GARCIA, Claudio - **IoT Technology in Industrial Application (IIoT) -Used in monitoring of control valves.....45**

MELO, Thallyson; TRONCO, Tania Regina; DANTAS, Renato Falcão; AVILA, Luis F. de* - **Internet of Things: An Architecture to Online Monitoring Environmental parameters.....50**

LIMA, Lícia Sales Costa; DORIA, Renan Trevisoli; Ricardo Suyama; Ivan Casella; Rodrigo T Doria; Carlos E Capovilla - **Optimizing RF Energy Harvesting Systems for IoT Applications using Reinforcement Learning.....55**

PEREIRA, Danne Makleyston*; BRAYNER, Angelo - **UFCity: A software architecture to create data ecosystem in smart cities.....60**

MARTINS, Andressa C*; MONOBI, Felipe Minoru Costa; ROBERETO, Julia M; LYRA, Pedro HC de; SOUZA, Gustavo F - **Development of an IoT-based Structural Parameter Monitoring System.....65**

BARROS, Glauber M. Silva*; AQUINO, Gibeon; LOPES, Paulo H Q; OLIVEIRA, Felipe - **EDRaft: An Energy-Aware Consensus Algorithm for Low-Power IoT Devices.....70**

SOBRINHO, Osvaldo Gogliano*; BERNUCCI, Liedi Legi Mariani; CORRÊA, Pedro Pizzigatti; MOTTA, Rosangela dos Santos; MACHICAO, Jeaneth; JUNQUEIRA, Angelo Samuel; QUIEROZ, Wellinghton Dias de; MELO e SILVA, Thales Cesar Giriboni de; CASSARO, Luciano; OLIVEIRA, Luciano - **IoT and big data analytics: under-rail maintenance management at Vitória – Minas Railway.....75**

REIS, Luiz; SOUZA, Ingrid; SILVA, Jorge; CARVALHO, Celso B*; SILVA JR, Waldir da; BESSA, Andrey; AMOEDO, Diego; MATTOS, Edma - **Wireless IoT System for Detection of Fruit Maturation by Color and Ethylene Gas.....80**

SILVA JR., Waldir da; CARVALHO, Celso B*; AMOEDO, Diego Alves; VALLERIA, Edma - **Human resources training project in wireless communication technologies and IoT.....85**

CANTARION, Wesley Mateus*; MONTEIRO, Vinícius Emídio; COSTA, Luis Guilherme Silva; RIBEIRO, MOISES V - **Passive Analog Blocking Filter for Narrowband PLC Systems.....90**

COSTA, Luis Guilherme Silva*; ROCHA, Thiago C; GONÇALVES, Gustavo; CANTARINO, Wesley Mateus; RIBEIRO, Gabriel; RIBEIRO, MOISES V - **An Augmented Capacitive Coupling Circuit for Boosting PLC Systems in IoT Domains.....95**

MATOS, Saulo*; COLETTI, Otávio; UGUCIONI FILHO, Fernando; CARVALHO, Ricardo; PINTO, Thomas; BARROS, Luiz de; RANIERI, Caetano M; EDUARDO, Bruno; UEYAMA, Jó; PESSIN, Gustavo - **Evaluating Conveyor Belt Health With Signal Processing Applied to Inertial Sensing.....100**

MIHAELJANS, Martins*; SKRASTINS, Andris - **Openthread network density evaluation: Quanititative analyses.....105**

CAVALCANTI, Millena*; ENDLER, Markus; LAMENZA, Thiago - **Livestock Management from the Air with RFID and Cooperating Drones.....110**

SOUZA, Bruno Pedraça de*; PAIVA, Bruno Dantas de; TRAVASSOS, Guilherme - **Using Experimentation to Assess Security Requirements in IoT Software Systems.....115**

FLORES, Thommas Kevin Sales*; ANDRADE, Matheus; MEDEIROS, Morsinaldo; AMARAL, Miguel; SILVA, Marianne; SILVA, Ivanovitch - **Leveraging IoT and TinyML for Smart Battery Management in Electric Bicycles.....120**

RAMPAZZO, Felipe José Aguiar*; HENRIQUES, Marco Aurelio Amaral - **Assessment of the Impact of Hybrid Post-Quantum Cryptography on the Performance of the MQTT Communication Protocol.....125**