

2019 9th International Symposium on Embedded Computing and System Design (ISED 2019)

**Kollam, India
13 – 14 December 2019**



**IEEE Catalog Number: CFP1975L-POD
ISBN: 978-1-7281-4178-7**

**Copyright © 2019 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:	CFP1975L-POD
ISBN (Print-On-Demand):	978-1-7281-4178-7
ISBN (Online):	978-1-7281-4177-0
ISSN:	2473-9421

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

2019 Ninth International Symposium on Embedded Computing and System Design

ISED 2019

Table of Contents

A Reconfigurable Time-to-Digital Converter based on Pulse Stretcher and Gated Delay Line.....	1
<i>Mishra, Biswajit; Kumar, Bitu</i>	
A SMART Goal-based Framework for Privacy Preserving Embedded Forensic Investigations	6
<i>Pathak, Jayant; Sankaran, Sriram ; Achuthan, Krishnashree</i>	
ABC-GNX: A Hybrid Algorithm for Scheduling of Digital Microfluidic Biochip Operations	11
<i>Kolluri, Rajesh; Phani Kumar, J. V.; Swain, Jyotiranjana; Pyne, Sumanta</i>	
Aggregating Unstructured Submissions for Reliable Answers in Crowdsourcing Systems.....	16
<i>Kurup, Ayswarya R.; G. P., Sajeev</i>	
An ECG-PPG Wearable Device for Real Time Detection of Various Arrhythmic Cardiovascular Diseases	23
<i>Mishra, Biswajit; Arora, Neha; Vora, Yash</i>	
Analysis of Affordance Detection Methods for Real-World Robotic Manipulation	28
<i>Williams, Xavier; Mahapatra, Nihar R.</i>	
Analysis of Three Point Checklist and ABCD Methods for the Feature Extraction of Dermoscopic Images to Detect Melanoma	33
<i>Krishna, Sruthi; Ajai A S, Remya</i>	
Approximation and Bit Truncation Techniques in Hardware for Edge Detection	38
<i>Datta, Anvesha; Mohanta, Aditya; Mishra, Biswajit</i>	
Capacitance based Non-destructive technique for post-harvest sugarcane quality prediction	43
<i>Arumugam, Subramanian; H., Theivaprakasham; M. R., Kamakshidevi; R., Suburaaj; B., Sabarish Narayanan</i>	
Classification of cardiac arrhythmia of 12 lead ECG using combination of smoteenn, xgboost and machine learning algorithms.....	48
<i>B. R., Manju; R. Nair, Anju</i>	
Comparative analysis of control-transfer instructions on WCET of real-time systems.....	55
<i>Niloy Ghosh, Soma; Bhargava, Lava; Sahula, Vineet</i>	

Comparative Study of Test Pattern Generation Systems to Reduce Test Application Time	59
<i>Dilip Patare, Snehal ; R. S., Geethu; Bhakthavatchalu, Ramesh</i>	
Comparison of Lossless Data Compression Techniques in Low-Cost Low-Power (LCLP) IoT Systems	63
<i>Hanumanthaiah, Aravind; Gopinath, Athira; Arun, Chandni; Hariharan, Balaji ; Murugan, Ravisankar</i>	
Coreference Resolution in Ambiguous Pronouns Using BERT and SVM.....	68
<i>Mohan, Monisha; J. Nair, Jyothisha</i>	
Design And Implementation of Automatic Garbage Collecting Robot using Background Subtraction based Computer Vision Algorithm	73
<i>R., Renjith ; R., Reshma</i>	
Design of High Resolution Delta Sigma Modulator in 180 nm CMOS technology	78
<i>Bonthala, Samarth; Uppor, Yashas; Nayak, Ashika; Polineni, Sreenivasulu; Bhat, M. S.</i>	
Design of MODBUS based monitoring system for Variable Frequency Drive.....	84
<i>Ravindran, Sapna; R., Manju; Varghese Thomas, Rohit</i>	
Effect of Trojans on Write Data Access in Memory.....	89
<i>Das, Baisakhi; Das, Nilanjana; Sikdar, Biplab K</i>	
Electronic Unit for Ultrasonic Solid Propellant Burn Rate Measurement System	94
<i>Sankar T. P., Haneesh; B., Harikrishnan; Chandarn R., Sarath; K. R., Rajesh; R., Jeenu; Pinumalla, Kiran</i>	
Energy and Performance Comparison of Cryptocurrency mining for Embedded Devices	99
<i>Sankaran, Sriram ; Pramod, Nithuna; Achuthan, Krishnashree</i>	
Fault tolerant scheduling in mixed criticality system- A case study.....	104
<i>Godabole, Preeti ; Bhole, G. P.</i>	
Fault-tolerant Quantum Implementation of 1-bit and 4-bit Comparator Circuit using Clifford+T-group	108
<i>Biswal, Laxmidhar ; Bandyopadhyay, Chandan ; Rahaman, Hafizur.....</i>	
Flow-Based Passive Microfluidic Architecture for Homogeneous Mixing.....	114
<i>Banerjee, Tapalina; Poddar, Sudip ; Wille, Robert; Bhattacharya, Bhargab B.</i>	
IoT Architectures for Noninvasive Blood Glucose and Blood Pressure Monitoring	120
<i>Guntha, Ramesh</i>	
IoT Based Solar Power Monitor & Controller for Village Electrification.....	125
<i>Hanumanthaiah, Aravind; M.L., Liya; M., Aswathy; Arun, Chandni</i>	
Lightweight Message Encoding of Power-Gating Controller for On Time Wakeup of Gated Router in Network-on-Chip.....	130
<i>Neelkamal; Yadav, Sonal; Kapoor, Hemangee K.</i>	

Low-level strongly typed dataframes for machine learning and statistical computing in resource-constrained devices	136
<i>Poroor, Jayaraj</i>	
Modeling the Automation Level of Cyber-Physical Systems Designed for Food Preparation ...	141
<i>Mujtaba, Dena F.; Mahapatra, Nihar R.</i>	
Resource Constrained Onboard Controller System for Real-time Fishing Boat Tracking in High Seas	146
<i>Guntha, Ramesh ; Shibu N. B., Sai; N. Rao, Sethuraman.....</i>	
Schedule Synthesis for the Messages with Precedence Constraint over Dynamic Segment of the FlexRay Protocol	151
<i>Kumar, Niraj; Mondal, Arijit</i>	
Security over Voice Controlled Android Applications for Home IoT Systems	157
<i>Sankaran, Sriram ; M. R., Prabha</i>	
Shape Recovery by Point Illumination using a Rotating Point Spread Function Imager	162
<i>Kumar, Rakesh; Prasad, Sudhakar</i>	
Survey on Smart Health Management using BLE and BLE Beacons	169
<i>Rajamohanam, Deepthi; Hariharan, Balaji; Menon, K. A. Unnikrishna</i>	
Vehicle Routing and Facility-Location for Sustainable Lemongrass Cultivation	174
<i>Ajayan, Sreesankar ; Dileep, Anandhu; Mohan, Aravind; Gutjahr, Georg; Sreeni, K.R; Nedungadi, Prema</i>	
Wake-Up Circuit for PAM4 Receiver	180
<i>Guduru, Vamsi Krishna; Gupta, Richa; Polareddy, Bhavani Lakshmi; Unnikrishnan M., Anish; D. Parikh, Chetan; Sen, Subhajit</i>	
Author Index	186