

2020 IEEE International Conference on Internet of Things and Intelligence System (IoTaIS 2020)

**Bali, Indonesia
27 – 28 January 2021**



**IEEE Catalog Number: CFP20VVK-POD
ISBN: 978-1-7281-9449-3**

**Copyright © 2020 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:	CFP20VVK-POD
ISBN (Print-On-Demand):	978-1-7281-9449-3
ISBN (Online):	978-1-7281-9448-6

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

Table of Contents	iii
About IoTaIS 2020	v
Welcome Message from Chair of IoTaIS 2020	vi
Program	vii
Comittees	xi

Paper Titles

1	Design and Implementation of Raspberry House: An IoT Security Framework	1
2	Protection Profile Bricks for Secure IoT Devices	8
3	A Survey on Linear Prediction Residual Based Replay Attack Detection Systems	14
4	IDS Performance Analysis Using Anomaly-Based Detection Method for DOS Attack	18
5	Network Intrusion Detection System Using Neural Network and Condensed Nearest Neighbors with Selection of NSL-KDD Influencing Features	23
6	An Energy-Efficient Multi-Modal IoT System Leveraging NB-IoT and BLE	30
7	Collecting Indoor Environmental Sensor Values for Machine Learning Based Smart Building Control	37
8	Design Power Controller for Smart Grid System Based on Internet of Things Devices and Artificial Neural Network	44
9	Smart Voltage Monitoring: Centralised and Blockchain-Based Decentralised Approach	49
10	Energy Management System with IoT Connectivity for Portable Solar Power Plant	56
11	6LoWPAN Performance Analysis of IoT Software-Defined-Network-Based Using Mininet-IoT	60
12	Comparison of High Availability Performance on OpenDaylight with Corosync Pacemaker and OpenDaylight SDN Controller Platform Clustering	66
13	Designing Sigfox Network for Public Internet of Things in Batam Island	72
14	IoT Enabled Real-Time Availability and Condition Monitoring of CNC Machines	78
15	Accessibility Support in Urban Space	85
16	Edge Reasoning on Context Aware Environments: Application for the Indoor Displacement Problem	91
17	Medium Interaction Honeypot Infrastructure on the Internet of Things	98



18	Lightweight Remote Control of Distributed Web-Of-Things Platforms: First Prototype	103
19	ECOMA:Edge-Cloud Collaborative Framework for Multi-Task Applications	109
20	Precision Tuning of an Accelerometer-Based Pedometer Algorithm for IoT Devices	116
21	Image-Based Kinship Verification Using Dual VGG-Face Classifier	123
22	Optimized Face Detection and Alignment for Low-Cost and Low-Power IoT Systems	129
23	A Rigorous Analysis of Biomedical Edge Computing: An Arrhythmia Classification Use-Case Leveraging Deep Learning	136
24	Predicting Hospital No-Shows Using Machine Learning	142
25	The Last Mile of M-Connected-Healthcare in the Covid Age: Data Sharing at Large Scale	149
26	An AIoT System for Bat Species Classification	155
27	Finding the Proper Mental Stress Model Depending on Context Using Edge Devices and Machine Learning	161
28	Phishing Web Page Detection Methods: URL and HTML Features Detection	167
29	Diagnosis and Prognosis of a Cartesian Robot's Drive Belt Looseness	172
30	Thai Calligraphy Using Adversarial Generative Network	177
31	Ultra-Low Power Embedded Unsupervised Learning Smart Sensor for Industrial Fault Detection	181
32	Ultra Low-Power Always-on Wake-Up by Pulse Pattern Adaptive Recognition for Long Term Biodiversity Monitoring	188
33	Smart Patch: An IoT Based anti Child Trafficking Solution	194
34	Android-Based Disaster Management Application for After-Disaster Rapid Mobile Assessment	201
35	Adapting Google Translate Using Dictionary and Word Embedding for Arabic-Indonesian Cross-Lingual Information Retrieval	205