3.3.2 Number of books and chapters in edited volumes/books published and papers published in national/ international conference proceedings per teacher during last five years

DVV Comments	HEI Response	Author/Book Name	Page No.
Values have been updated excluding the books without ISBN no. and ISBN no. not found on https://isbnsearch.org/isbn/ and https://isbn.gov.in/Home/SearchIsbnNew has not been considered; HEI to provide cover page, content page, first page of the following publication highlighting the name of HEI, ISBN no., year of publication, name of author : 1) Information Technology (2021-22) 2) Physics for Electronics Engineering (2018-19) 3) Basic Civil & Mechanical Engineering (2018-19) 4) Problem Solving & Python Programming (2019-20) 5) Engineering Chemistry (2019-20) 6) High Voltage Direct current transmission (2018-19)	1. DVV suggestions are accepted for 2018-19, 2019-20, 2020-21 and 2021-22. 2. For 2022-23, conference paper entitled "Extended Finite State Machine based Fault Tolerance in WSN", are provided during the submission of SSR but not considered. The details are "7th International Conference on Computing Methodologies and Communication (ICCMC), ISBN: 978-1-6654-6409-3, IEEE xplore Publications.	Ahsan Sheriff (2022-23)	2-5
	The document as per the requirements are provided for the book	1) Information Technology (2021-22)	7-9

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Sl. No.	Name of the teacher	Title of the book/chapters published	Title of the paper	Title of the proceedings of the conference	Name of the conference	National / International	Calendar Year of publication	ISBN number of the proceeding	Affiliating Institute at the time of publication	Name of the publisher
1	Ahsan Shariff	International Conference on Computing Methodologies and Communication (ICCMC)	Extended Finite State Machine based Fault Tolerance in WSN	International Conference on Computing Methodologies and Communication (ICCMC)	7th International Conference on Computing Methodologies and Communication (ICCMC)	International	2022-23	978-1-6654-6409-3	Aalim Muhammed Salegh College of Engineering	IEEE xplore

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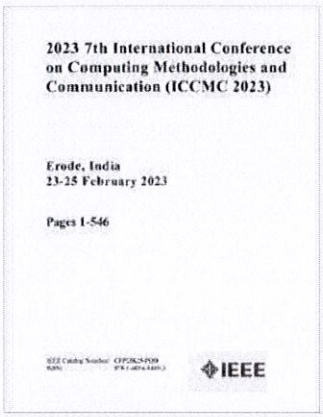

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COLLEGE OF ENGINEERING

Extended Finite State Machine based Fault Tolerance in WSN

Publisher: IEEE

D. Lekha ; Ansan Shariff M. ; S. Venkata Lakshmi ; Anwar Basha H All Authors

Abstract:
Wireless Sensor Network (WSN) suffers from different malware attacks. Several traditional approaches are proposed for detecting fault nodes in WSN. It is necessary to redistribute the nodes and detect the fault nodes while modifying the WSN parameters. Faults can occur in the nodes interrupting the continuous communication process of the nodes in the WSN. The main reason for a fault is also the induction of the energy drain in a node to the maximum possible level, failure of links in communicating nodes due to bandwidth constraints, and attacks induced by the malicious nodes. To solve this problems, Extended Finite State Machine based Fault Tolerance (EFSM_FT) in the WSN is used to detect the fault sensor nodes in the WSN. In this approach, called the finite state machine (FSM), state prompted is modified while a set of situations are true. Every node can be absolutely to be faulty or not establishing on the sensor node states. Using sensor energy, drop rate, forward sensor rate, sensor obtained rate, bandwidth, and transmission delay, this method finds the node with the fault. As a result, this approach accurately detects the faulty nodes in the WSN. The simulation outcomes illustrate the proposed method has a better fault detection ratio and minimizes the false negative ratio in the WSN.

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Extended Finite State Machine based Fault Tolerance in WSN

D.Lekha
Department of Computer Science and Engineering,
RMK College of Engineering and Technology,
Chennai, Tamil Nadu, India.
lekhacse@rmkcet.ac.in

Ahsan Shariff M
Department of Computer Science and Engineering,
Aalim Muhammed Salegh College of Engineering,
Chennai, Tamil Nadu, India.
ahsan.shariff@gmail.com

S.Venkata Lakshmi
Artificial Intelligence and Data Science,
Sri Krishna College of Engineering and Technology,
Coimbatore, Tamil Nadu, India.
venkatalakshmis227@gmail.com

Anwar Basha H
School of Computer Science And Engineering,
REVA University, Bengaluru,
Karnataka, India.
anwar.mtech@gmail.com

***Abstract*—Wireless Sensor Network (WSN) suffers from different malware attacks. Several traditional approaches are proposed for detecting fault nodes in WSN. It is necessary to redistribute the nodes and detect the fault nodes while modifying the WSN parameters. Faults can occur in the nodes interrupting the continuous communication process of the nodes in the WSN. The main reason for a fault is also the induction of the energy drain in a node to the maximum possible level, failure of links in communicating nodes due to bandwidth constraints, and attacks induced by the malicious nodes. To solve this problems, Extended Finite State Machine based Fault Tolerance (EFSM_FT) in the WSN is used to detect the fault sensor nodes in the WSN. In this approach, called the finite state machine (FSM), state prompted is modified while a set of situations are true. Every node can be absolutely to be faulty or not establishing on the sensor node states. Using sensor energy, drop rate, forward sensor rate, sensor obtained rate, bandwidth, and transmission delay, this method finds the node with the fault. As a result, this approach accurately detects the faulty nodes in the WSN. The simulation outcomes illustrate the proposed method has a better fault detection ratio and minimizes the false negative ratio in the WSN.**

Keywords—Finite state machine, Wireless sensor network, Fault tolerance, Fault detection ratio, False negative ratio.

I. INTRODUCTION

Wireless sensor networks (WSN) build the structure for an extensive assortment of applications regarding security, services of the military, and observation. Fault control, as well as fault tolerance, is a complex problem since, in WSNs, nodes are vulnerable to failure due to energy decline, hardware breakdown, transmission link errors, and injurious attacks [1]. Thus, fault tolerance is the energetic feature in WSNs. With the obtain ability of lesser energy, tiny and low-cost devices have been utilized for several applications to ecological observing and military uses. Certain circumstances may arise here; the nodes in the WSN may not operate suitably owing to failures, and it develops inaccessibility to the network.

The finite state machine (FSM) is a standard method that is utilized for compound functions of a broad device. With the efforts offered, a sensor can be methodically measured following the evolution from the present state to the following state by an FSM [2]. FSM is broadly approved in several functional models. In precise, current digital circuits usually employ FSMs to construct control routes that control the information route proficiently. As the developed knowledge for semiconductors endures to scale down, manipulative high-function hardware with lesser size, great throughput, and lesser energy utilization has developed a simple task. Though, the possibility of the presence of unpredicted faults unavoidably rises in combined circuits. Since, it is incredible to remove unpredicted faults entirely.

Through the extensive utilization of WSN, greater dependability and immovability are being followed slowly. In many situations, the transmission proficiency for WSN is subjective through the complex ecological situations, the open features of channels, the energy restrictions of sensor nodes, also network procedure design problems, eventually leading to a great probability of failure [3]. Consequently, a suitable and precise fault analysis is of much importance for a WSN to confirm the stable function and implementation effectiveness. To solve these issues, Extended Finite State Machine based Fault Tolerance in WSN is proposed. An EFSM_FT model is designed and incorporated in a WSN to analyze the performance for fault detection. The objective is to use various present and previous states of the node conditions to decide whether a node is faulty or not. Routing is performed hop by hop based on the outcome of this block. EFSM_FT is an outstanding option for designing fault models in general due to the number of conditions evaluated. Therefore, a fault detection model for WSNs is designed vitally to ensure that the network performance is good. The main contributions of this paper include.

- Design of an EFSM_FT model with well-defined inputs and output
- Incorporation and analysis of the EFSM_FT model in a WSN simulation scenario
- Detect the fault nodes

II. RELATED WORKS

In WSN, an irregular cellular automaton is to recognize the faulty nodes by clustering and leader node selection, not using additional utilization and routing overhead. This approach is established on an energy level, neighbors,

3.3.2

Renewable Energy with IoT and Biomedical Applications

EDITORS

Dr.T.R.Ganesh Babu

Professor
Department of Electronics and Communication Engineering
Muthayammal Engineering College (Autonomous)
Rasipuram

Dr.K.Sekar

Associate Professor
Department of Electrical and Electronics Engineering
Hindusthan College of Engineering and Technology (Autonomous)
Coimbatore

T.Mangayarkarasi

Associate Professor and Head
Department of Instrumentation and Control Engineering
Sri Sairam Engineering College
Chennai

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Edited By

Dr.T.R.Ganesh Babu

Dr.K.Sekar

T.Mangayarkarasi

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CONTENTS

Inflexible Wireless Health Surveillance Sensor Shields for Health-Care Apps Associated with the IoT

M Balamurugan, Assistant Professor, Department of Computer Science and Engineering, Sri Sairam Engineering College, Chennai, Tamil Nadu, India, balamurugan.cse@sairam.edu.in.

R Reena Roy, Assistant Professor, Department of Information Technology, Easwari Engineering College, Chennai, Tamil Nadu, India, reenait12@gmail.com.

M Amanullah, Associate Professor & Head, Department of Information Technology, Aalim Muhammed Salegh College of Engineering, Chennai, Tamil Nadu, India, amanhaniyal2@gmail.com.

K Shantha Shalini, Assistant Professor, Department of Computer Science and Engineering, Aarupadai Veedu Institute of Technology, Paiyanoor, Tamil Nadu, India, shanthashalini@gmail.com

Abstract

This same Artificial intelligence is a modern model of connectivity that allows components from different fields to be linked via the internet. In the new world of health care, the existing medical system needs more and more social services, such as physicians, nurses, hospital beds and health tracking systems, one of the best IoT technologies is presented. In this article, we present to quantify the numerous biological signals, such as the Echocardiogram (ECG, photopsymography (PPG), and body temperature, the lightweight wearable sensor patchs. Since the ECG and PPG sensors are combined into the same system, the proposed sensor patch will be used to constantly estimate blood pressure (BP) without additional wires and equipment, depending on the pulse arrival time (PAT). The Patch consists of a central panel for signal procurement and analysis, a battery control board and three sensors for the recording of signals. Both modules are designed in a rigid-flex design, which for remote health monitoring applications can be conveniently connected to the human body. For tailored measurements of a certain physiological signal, the sensors may be removed from the centre board to reduce power consumption. Experiments are performed in compare to a commercial reference unit to verify the performance of the proposed sensor patch. The proposed sensor device will relay anthropometric signals wirelessly to the gateway by incorporation of a miniaturised Bluetooth Low Energy (BLE) module. On both sensor pacth and gateways, data encryption is implemented to secure data during transfer, for privacy and for security purposes. The bridge between the wearable sensor device and the Internet cloud is built to provide the health data to be processed and further analysed, both for a handheld (mobile phone based) and a fixed gateway (portable computer based). The viability of the IoT based healthcare software overall platform is shown by experimental findings.

INTRODUCTION

In different research areas, Internet of Things (IoT) has attracted tremendous interest. Many elements from various areas can be hooked up to IoT technologies and can exchange information and services without time and distance restrictions[1],[2]. One of the most enticing IoT technologies is the current healthcare[3]. Chronic diseases are one of the biggest problems in the wellbeing of the worldwide population with the growing lifetime of the human being[4].

Initial diagnosis and treatment of various diseases can improve the health conditions of patients and involves the continual observation of the health of human signs such as the rhythm of heart (HR), breathing rate (RR), blood pressure (BP), temperature of the body, etc. [5]. There is insufficient social capital (doctors, nurses, hospital beds and treatment facilities) in the conventional healthcare sector, compared with the growing elderly[6]. A potential option for the future health tracking market is the advent of smart devices with IoT technologies.