CRITERION – 3
RESEARCH, INNOVATIONS AND EXTENSION

KEY INDICATOR – 3.3
RESEARCH PUBLICATION AND AWARDS

METRIC NO. – 3.3.2

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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

3.3.2.1. Total number of books and chapters in edited volumes/books published and papers in national/ international conference proceedings year wise during last five years

Sr. No	Particulars	2022-23	2021-22	2020-21	2019-20	2018-19
1	No of Book /Chapters	02	05	00	00	00
2	No of National / Internationalconference	25	46	12	16	17
Total Number		**27**	**51**	**12**	**16**	**17**

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3.3.2 -E-copy of the Cover page, content page and first page of the publication indicating ISBN number and year of publication for books/chapters and conference proceedings

SN	Description	Link to the Document.
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2	Papers published in national/ international conference	View Document

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List of Book Chapter with Link of source website

Academic Year 2022-2023				
Sr. No.	**Name of the teacher**	**Title of the book/chapters published**	**Title of the Chapter**	**Evidence**
1	Mr. B. S. Rakhonde Dr. Chetan Khadase	Nature Inspired Algorithm for Optimization and Engineering Design	Open CV and MQTT Based Intelligent Trafic Management System	Click Here
2	Dr. B. T. Husain & Dr. M. A. Dande	Educational Reforms in the Modern World-Volume 2	Effective Innovative Academia And Industry Partnerships To Promote Higher Education With A Special Focus On Management Institutes In India	Click Here
Academic Year 2021-2022				
Sr. No.	**Name of the teacher**	**Title of the book/chapters published**	**Title of the Chapter**	**Evidence**
3	A. U. Jawadekar G. M. Dhole S. R. Paraskar S. S. Jadhao	Novel Perspectives of Engineering Research Vol. 7, 14 February 2022 , Page 140-151	Assessment of Artificial Neural Network-based Induction Motor Fault Classifier Using Continuous Wavelet Transform	Click Here
4	S. R. Paraskar	Novel Perspectives of Engineering Research Vol. 8, *2021 pp 11-23*	Study on Discrimination between Inrush and Fault in Transformer: ANN Approach	Click Here
5	S. D. Padiya	Implementing Data Analytics and Architectures for Next Generation Wireless Communications	Chapter 10: Analysis of Bluetooth Versions (4.0, 4.2, 5, 5.1, and 5.2) for IoT Applications.	Click Here
6	S. D. Padiya	IoT with BLE Beacons: Research Opportunities, Planning and Strategy (English Edition)		Click Here

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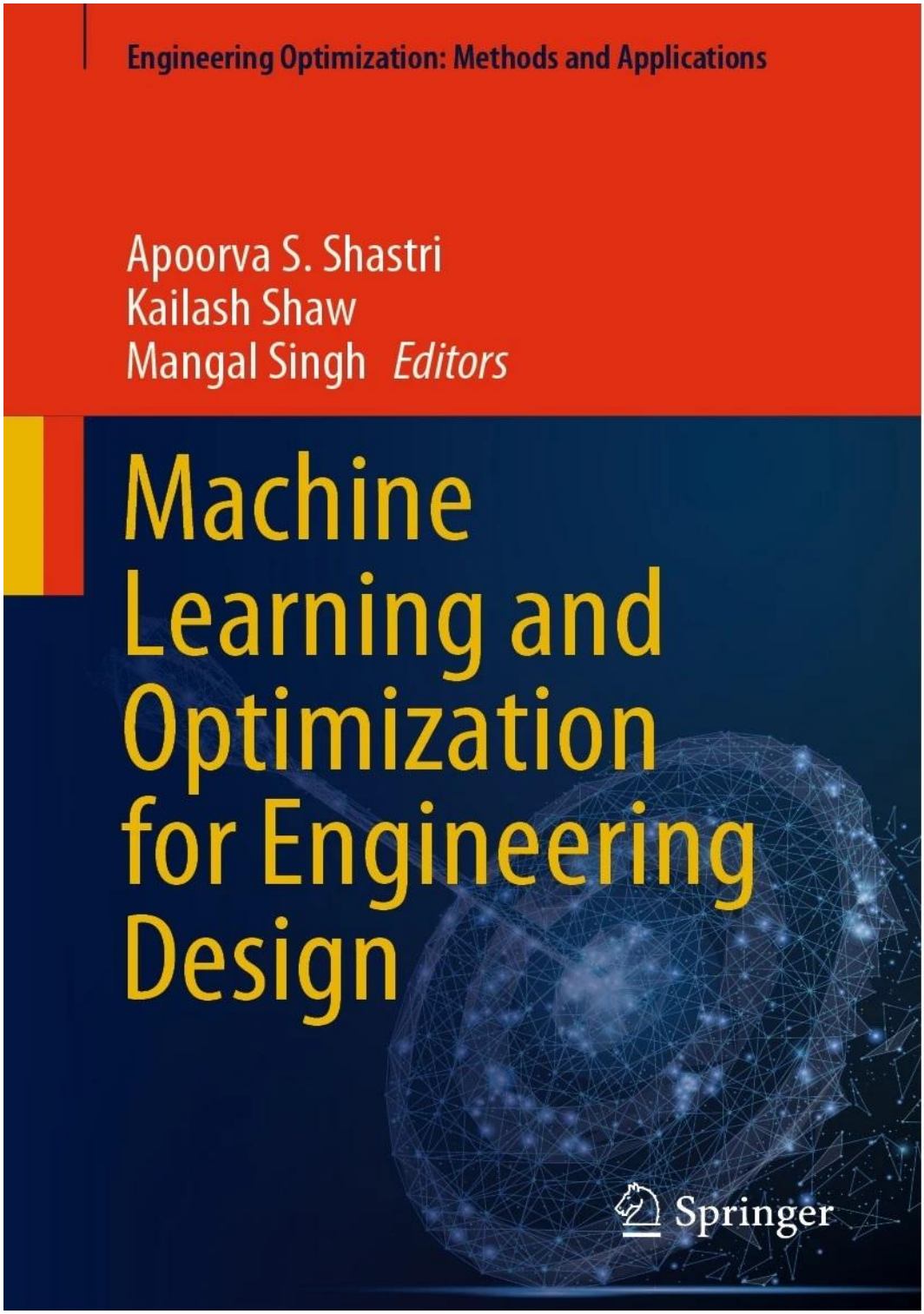

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OpenCV and MQTT Based Intelligent Management System

Anand Mahajan, Satej Gadekar, Sumit Sagave, Smita Paithankar, Bhushan Rakhonde, and Chetan Khadse

Abstract In this paper, a system is proposed which is intelligent and can perform identification, counting, and calculation of density of vehicles. After calculating the traffic density, the system classifies the density into low, medium, and high density with the help of a decision algorithm. This system is based on Python programming, and the libraries used in Python are Open-source Computer Vision, NumPy, Chardet, and time library. The system is implemented in IoT-based platform Message Queuing Telemetry Transport. The system methodology is carried out in four phases. The first is vehicle detection and counting. In the second phase, the number plate of the vehicle is detected as well as displayed. The third phase includes traffic density detection and finding out the emergency vehicle based on GPS Tracking using ESP32 and IoT over MQTT. Last phase is related to pollution monitoring. This complete model for the system is made, and the results are shown in the paper.

Keywords Chardet · NumPy · OpenCV python · Pip · Time · Wi-Fi · Pub-sub client · Software serial · TinyGPS++

1 Introduction

The smart traffic management system is a centralized system that works collectively with sensors and makes traffic congestion easy for everyday travelers. Many countries have poor traffic handling and management. The conventional traffic signal needs to be upgraded with the latest technology to mitigate the increasing number of vehicles

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S. Gadekar · S. Sagave · S. Paithankar · C. Khadse
Dr. Vishwanath Karad MIT World Peace University Pune, Pune, Maharashtra, India

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A. S. Shastri et al. (eds.), *Machine Learning and Optimization for Engineering Design*,
Engineering Optimization: Methods and Applications,
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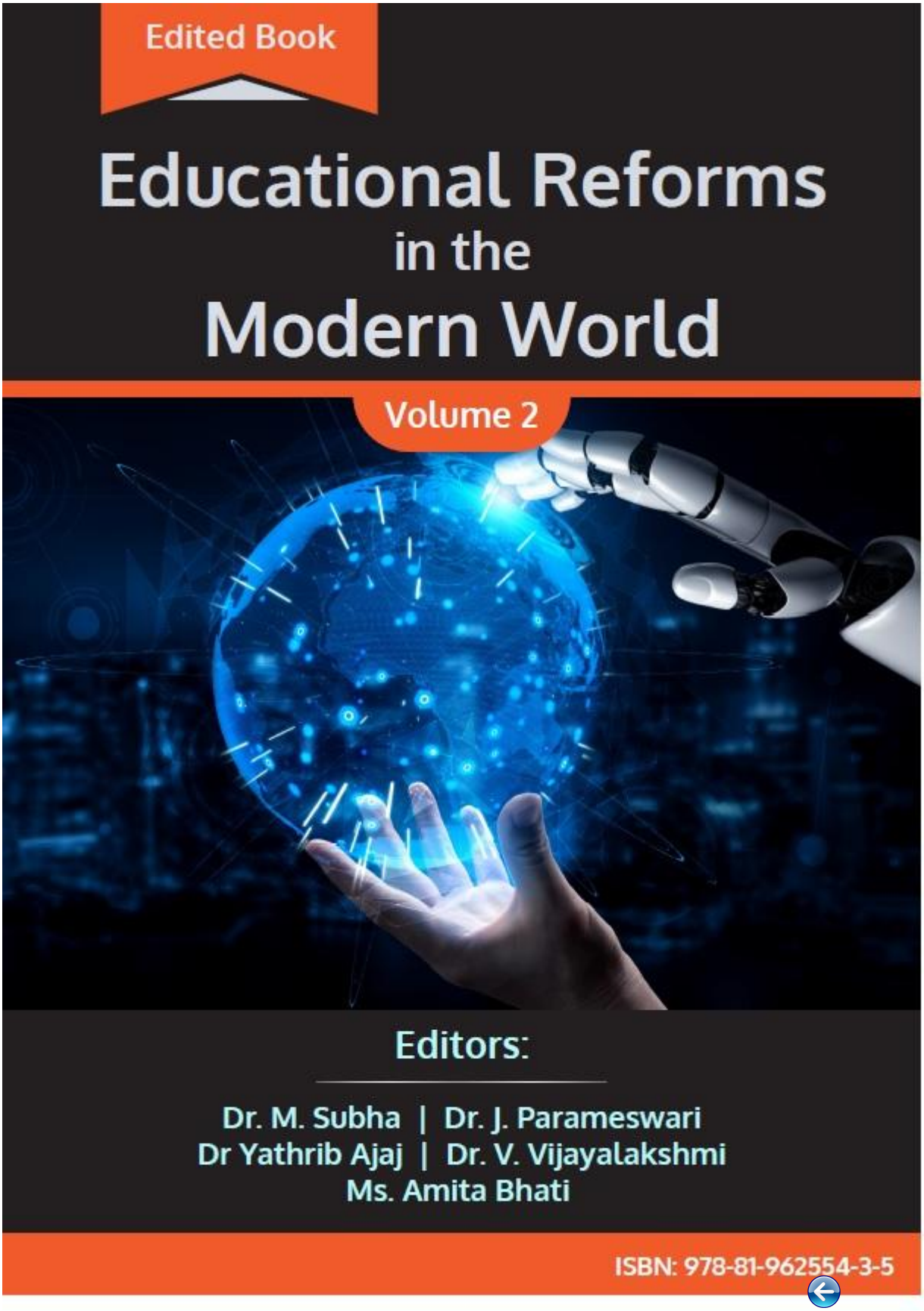

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CHAPTER 6

EFFECTIVE INNOVATIVE ACADEMIA AND INDUSTRY PARTNERSHIPS TO PROMOTE HIGHER EDUCATION WITH A SPECIAL FOCUS ON MANAGEMENT INSTITUTES IN INDIA

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Dr. Mayur Anil Dand
Assistant Professor

INTRODUCTION

Innovative partnerships between education institutes and industry have become increasingly important in the field of management education in India. These partnerships are collaborative efforts between government bodies, private organizations, and academic institutions aimed at promoting effective management education in the country. By combining the resources and expertise of various stakeholders, innovative partnerships in management education can help address some of the key challenges facing the sector, such as a shortage of skilled professionals, a lack of industry-academia collaboration, and the need to promote entrepreneurship and innovation. In this context, innovative partnerships can take many forms, including collaborations to establish new management institutes, joint research projects, specialized training programs, and competitions that promote entrepreneurship and innovation. This chapter explores some examples of academia and industry partnerships in management education in India and their impact on the sector. It also sets out guidelines to set up an effective partnership between education institutes and industry.

1. Indian Institute of Management (IIM) Bangalore and the Karnataka government innovative partnership:

One example of an innovative public-private partnership for a management institute in India is the collaboration between the Indian Institute of Management (IIM) Bangalore and the Karnataka government. The partnership aims to establish the "Bengaluru Innovation and Entrepreneurship Centre" (BIERC), which will provide a platform for startups, entrepreneurs, and investors to collaborate and promote innovation and entrepreneurship in the region.

The partnership includes the provision of funding, infrastructure, and resources from the Karnataka government, while IIM Bangalore will provide the academic and research expertise necessary to support the center's activities. The center will provide incubation facilities, training programs, and mentoring support to startups and entrepreneurs, with a focus on promoting innovation and entrepreneurship in areas such as healthcare, education, and sustainability.

This innovative public-private partnership is an excellent example of how partnerships can be used to promote innovation and entrepreneurship in higher education. By bringing together the expertise of academia and the resources of the government, the partnership can provide a comprehensive


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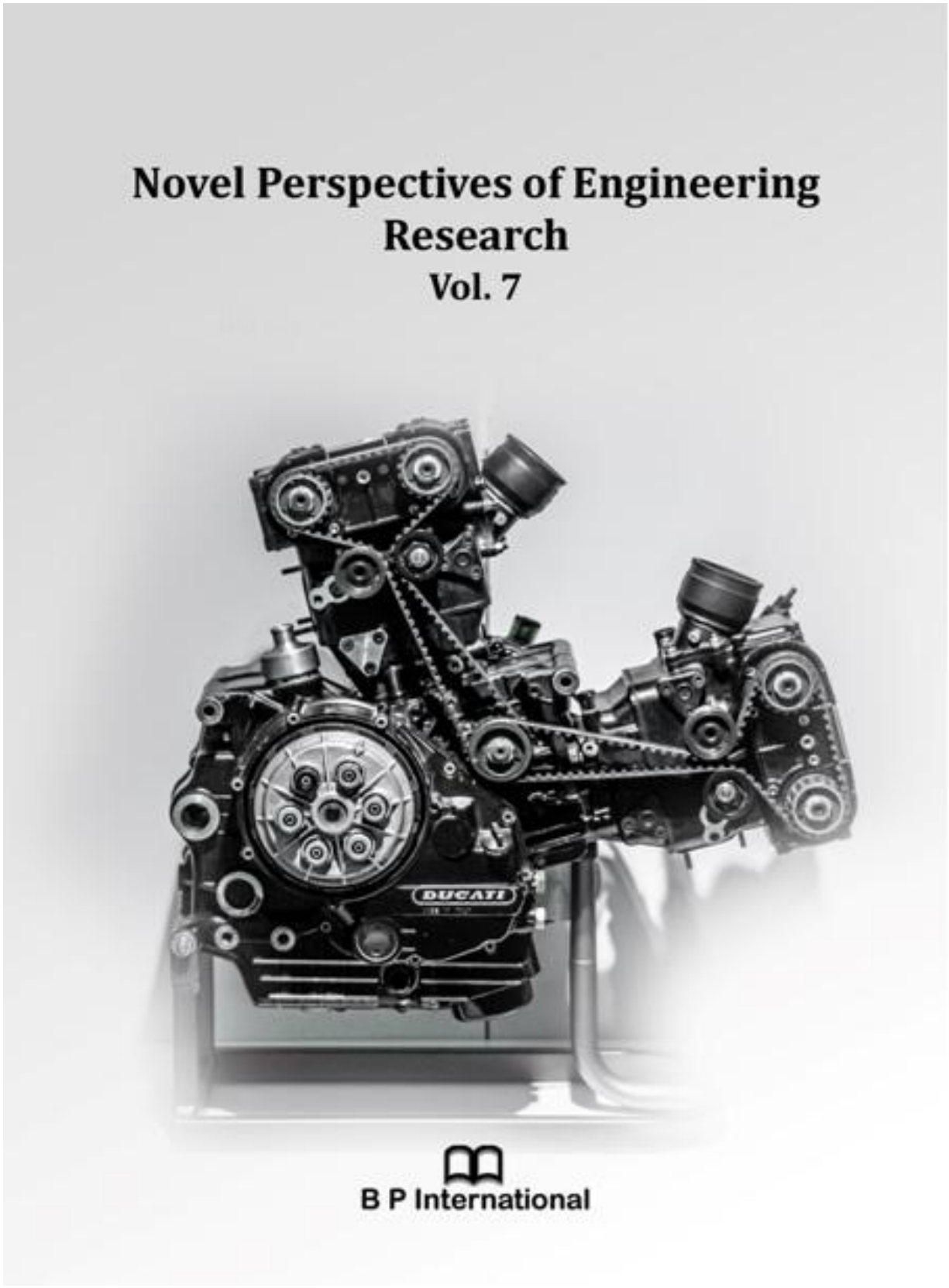

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Implementation of High Speed 8-bit Multiplier in FPGA with Lesser Adder Elements
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Assessment of Artificial Neural Network-based Induction Motor Fault Classifier Using Continuous Wavelet Transform
A. U. Jawadekar, G. M. Dhole, S. R. Paraskar, S. S. Jadhao

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Determining the Impact of Geometry Effects on Artery Stent Deployment Characteristics

V. Hashim, S. L. Resmi, P. N. Dileep, Jesna Mohammed, A. Rajeev

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Assessment of Artificial Neural Network-based Induction Motor Fault Classifier Using Continuous Wavelet Transform

A. U. Jawadekar ; G. M. Dhole ; S. R. Paraskar ; S. S. Jadhao

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Abstract

Induction motors are widely used in industrial, commercial, and residential applications due to their significant advantages over other types of electric motors. These motors are subjected to a variety of operating stresses that can result in faults. Bearing faults, stator interturn faults, and cracked rotor bars are the most common recurrent faults in induction motors. Early detection of induction motor faults is critical for reliable and cost-effective operation. Faults and failures of induction motor can lead to excessive downtimes and generate large losses in terms of maintenance and revenues. The purchasing and installation cost of equipment usually cost less than half of total expenditure over the life of machine for maintenance. Maintenance cost is 15% to 40% of the total cost and it can go up to 80% of the total cost. In many cases, the failure of a critically loaded machine can bring an entire industry process to a halt. The growing demand for high-quality and low-cost production has increased the need for automated manufacturing systems with effective monitoring and control capabilities.

Condition monitoring and fault diagnosis of an induction motor are critical in the manufacturing process. It can reduce maintenance costs and the risk of unexpected failures by allowing for the early detection of catastrophic failures. There are many condition monitoring methods, including vibration monitoring, thermal monitoring, chemical monitoring, acoustic emission monitoring, but all these methods require expensive sensors or specialized tools. Whereas the current monitoring does not require additional costly sensors as basic electrical quantities voltage and current are readily measured by voltage and current transformers that are always installed as a part of the protection system. As a result current monitoring is non-intrusive and may be implemented even if the motor is at the remote end from the motor control center. Thus MCSA proves to be a low cost online nondestructive fault diagnosis and detection system to provide accurate assessment of motor faults.

This chapter presents experimental results for multiple fault detection in induction motors using signal processing and artificial neural network approaches. The continuous wavelet transform was used to analyse motor line currents recorded under various fault conditions. A feedforward neural network was used for fault characterization based on fault features extracted using continuous wavelet transform.

Keywords: Artificial neural networks; continuous wavelet transform; induction motor; multiple fault detection


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Redshift: Expansion of Space or Inhomogeneities? (https://stm.bookpi.org/NPER-V8/article/view/6118)

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Study on Discrimination between Inrush and Fault in Transformer: ANN Approach

S. R. Paraskar

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Abstract

Transformer protection is a critical issue in power systems because it involves accurately and quickly distinguishing magnetising inrush current from internal fault current. An artificial neural network has been proposed and demonstrated its ability to solve the transformer monitoring and fault detection problem using a low-cost, dependable, and noninvasive procedure. This paper presents an algorithm in which statistical parameters of detailed d1 level wavelet coefficients of signal are used as an input to the artificial neural network (ANN), which develops into a novel approach for online detection method to discriminate the magnetising inrush current and inter-turn fault, as well as the location of fault, i.e. whether the interturn fault lies in primary or secondary winding, using discrete wavelet transform and artificial neural network (ANNs). In the laboratory, information from controlled experiments was collected using a custom-built single-phase transformer. Following feature extraction with the discrete wavelet transform (DWT), a neural network model MLP was designed and rigorously trained. It is also discussed the proposed on-line detection scheme.

Keywords: Neural networks; transformer; fault detection; discrete wavelet transform (DWT); inrush current


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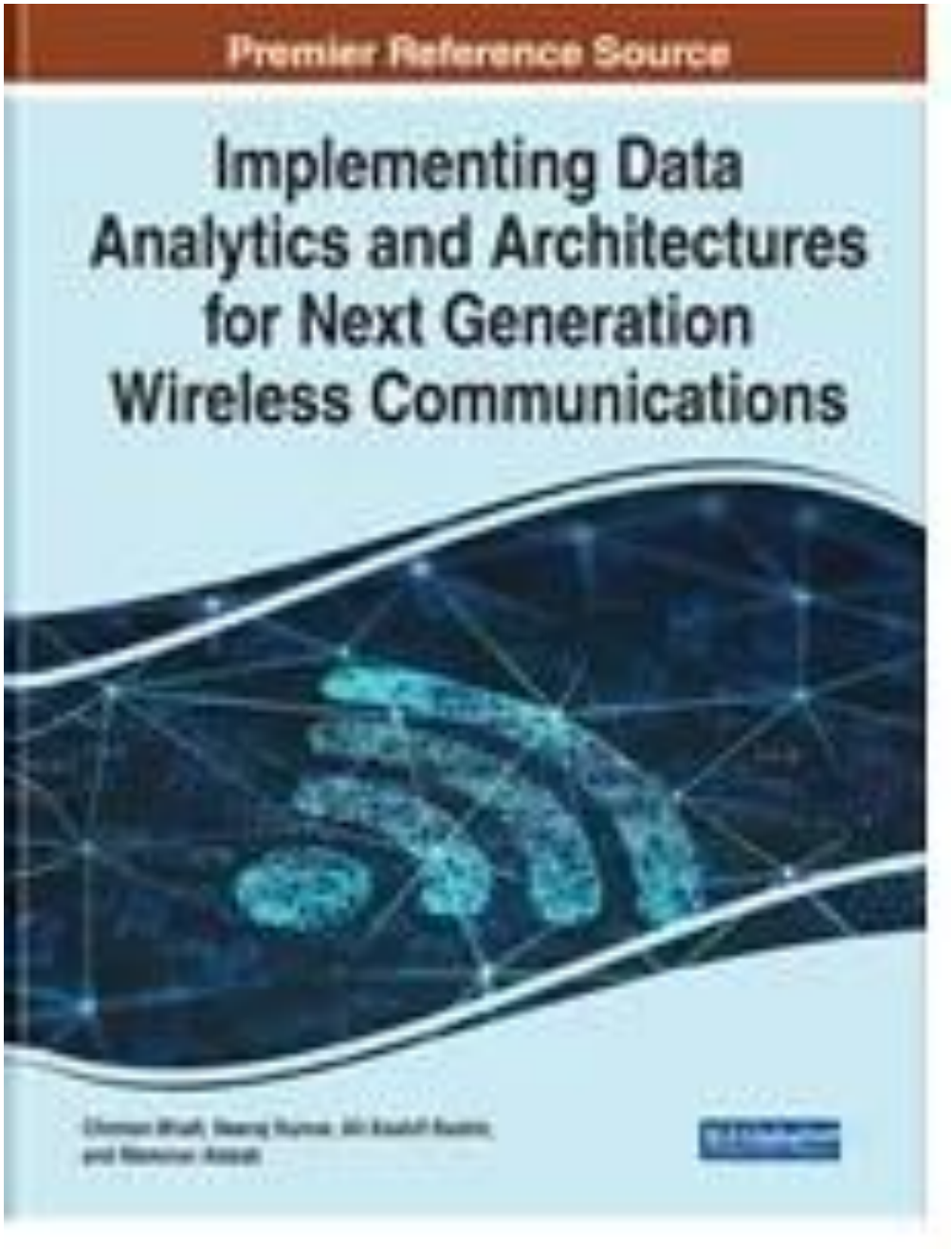

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Chapter 10

Analysis of Bluetooth Versions (4.0, 4.2, 5, 5.1, and 5.2) for IoT Applications

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ABSTRACT

IoT includes many sensors that have to collect the data and send it to the superior nodes; for such interaction between the IoT devices, various wireless technologies are available, like infrared, Li-Fi, WI-Fi, Zigbee, Bluetooth, etc. Among all the available, Bluetooth proved the most promising short-range wireless communication technology due to various factors. To fulfil the increasing demand for wireless connectivity, the Bluetooth SIG must continuously perform up-gradation. Here, analysis of Bluetooth versions are discussed based on the characteristics such as speed, bandwidth, range, power, message capacity, beacon provision, compatibility, reliability, errors detection, correction capability, advertisement packets, duty cycle, slot availability masks, and many more. This analysis concluded that all the versions have their own set of merits and limitations. For the basic IoT applications (limited functionalities), Bluetooth 4.0/4.2 is a good choice, while for the complex IoT applications (advance functionalities), Bluetooth 5/ 5.1/ 5.2 is better.

INTRODUCTION

The Internet of Things (IoT) involves various wireless communication technologies to makes devices capable of interacting with each other. Nowadays, IoT with various dedicated sensors, devices and wireless communication technologies making a human lifestyle easier and smarter. Therefore, in our personal lives, IoT devices are becoming more prevalent and pervasive. Due to the IoT era, sensors are everywhere

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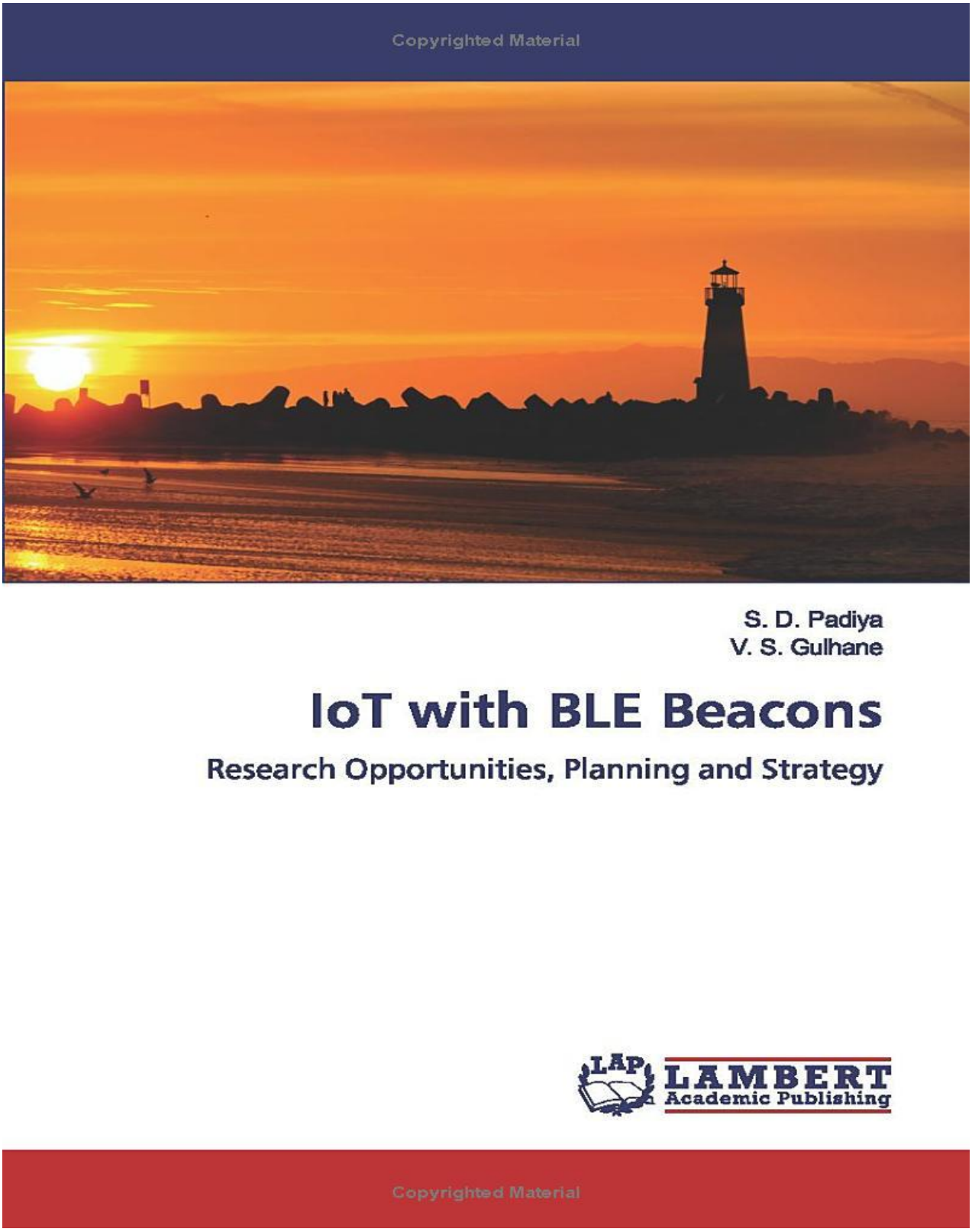

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