## Criteria 3: Research, Innovations and Extension

### Key Indicator – 3.2 Research Publication & Award

**3.2.2 Number of books and chapters in edited volumes/books published and papers published innational/ international conference proceedings per teacher during the A.Y-2022-23 year**

| Sr. No. | Name of the teacher | Title of the book/chapters published | Title of the paper | Title of the proceedings of the conference | National / International | ISBN/ISSN number of the proceeding |
|---|---|---|---|---|---|---|
| 1 | Dr. S. B. Patil | - | Machine Learning algorithms To improve the accuracy of Brain Tumor | International Conference on Multidisciplinary Research (ICMR-2022) | International | --- |
| 2 | Dr. S. B. Patil | - | Fuzzy based open switch fault Diagnosis of three phase voltage source. | 6th International Conference On Computing, Communication, Control And Automation (ICCUBEA-2022) | International | ISBN:978-1-6654-8451-0 |
| 3 | Dr. S. B. Patil | - | Preprocessing and skull stripping of brain Tumor Extraction from magnetic resonance imaging image using image processing | International Conference Of Recent Trends in Computing (ICRTC 2022) | International | --- |
| 4 | Dr. S. K. Pawar | - | Implementing Combinative Distance base assessment(CODAS) for selection of natural fibre for longlasting composites | First International Conference on Modern Materials For Engineering and Research(ICMMER 2022) | International | ISSN:1662-9752 |
| 5 | Prof T. M. Dudhane | - | Smart Trolly Using Barcode and IoT | 6th International Conference On Computing, Communication, Control And Automation (ICCUBEA-2022) | International | ISBN:978-1-6654-8451-2 |
| 6 | Prof J. J. Bandal | - | Smart Trolly Using Barcode and IoT | 6th International Conference On Computing, Communication, Control And Automation (ICCUBEA-2022) | International | ISBN:978-1-6654-8451-3 |
| 7 | Prof B. R. Bhatti | - | Face Recognition System Using Machine Learning With OpenCV and Telegram BOT | 6th International Conference On Computing, Communication, Control And Automation (ICCUBEA 2022)" | International | ISBN:978-1-6654-8451-4 |

| Sr. No. | Name of the teacher | Title of the book/chapters published | Title of the paper | Title of the proceedings of the conference | National / International | ISBN/ISSN number of the proceeding |
|---|---|---|---|---|---|---|
| 8 | Prof. K. S. Khamkar | - | Face Recognition System Using Machine Learning With OpenCV and Telegram BOT | 6th International Conference On Computing, Communication, Control And Automation (ICCUBEA 2022) | International | ISBN:978-1-6654-8451-5 |
| 9 | Prof N. D. Bagul | - | Automatic Tire Infletion System for Defense Vehicle | 6th International Conference On Computing, Communication, Control And Automation (ICCUBEA 2022) | International | ISBN:978-1-6654-8451-6 |
| 10 | Prof S. V. Jagtap | - | Automatic Tire Infletion System for Defense Vehicle | 6th International Conference On Computing, Communication, Control And Automation (ICCUBEA 2022) | International | ISBN:978-1-6654-8451-7 |
| 11 | Prof H. G. Fadtare | - | Mathematical Techniques in Engineering Applications | 6th International Conference On Computing, Communication, Control And Automation (ICCUBEA 2022) | International | ISBN:978-1-6654-8451-8 |
| 12 | Prof R. B. Raut | - | Review on Synthesis and Calculation Of Cerium Doped on Nickel Magnesium Spinel Ferrite | 6th International Conference On Computing, Communication, Control And Automation (ICCUBEA 2022) | International | ISBN:978-1-6654-8451-9 |
| 13 | Prof. K. R. Juare | - | To Enhance The Productivity And Speed of Construction Using Automation Industry | 6th International Conference On Computing, Communication, Control And Automation (ICCUBEA 2022) | International | ISBN:978-1-6654-8451-10 |
| 14 | Prof. S. S .Jadhav | - | To Enhance The Productivity And Speed of Construction Using Automation Industry | 6th International Conference On Computing, Communication, Control And Automation (ICCUBEA 2022) | International | ISBN:978-1-6654-8451-11 |
| 15 | Dr. S. I. Nipanikar | Information and Communication Technology for Competitive Strategies (ICTCS-2022) | Steganography in Colour Images Arnold Chaotic Map and Optimized Curvelet Transform | - | International | ISBN:978-981-19-9303-9 ISBN:978-981-19-9304-6(e-book) |

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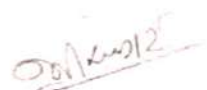
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Title of the paper: Preprocessing and Skull Stripping of Brain Tumor Extraction from Magnetic Resonance Imaging Images Using Image Processing

Dr. D. B. Kshirsagar
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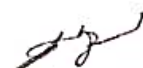
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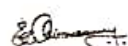
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for presenting the research paper entitled "Implementing Combinative distance base assessment (CODAS) for selection of natural fibre for long lasting composites" in the First International Conference on Modern Materials for Engineering and Research (ICMMER 2022) held at Hotel Aloft, Coimbatore, Tamil Nadu, India during 29 - 30, September 2022. The conference has been organized by the Department of Mechanical Engineering, Sengunthar Engineering College, Tiruchengode, Tamil Nadu, India.

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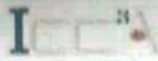[NBA accredited|NAAC Accredited with 'A' Grade |An Autonomous Institute )

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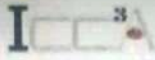(NBA accredited|NAAC Accredited with 'A' Grade |An Autonomous Institute )

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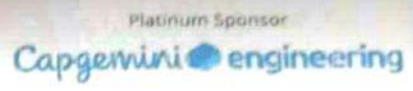(NBA accredited|NAAC Accredited with 'A' Grade |An Autonomous Institute )

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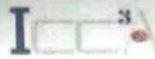(NBA accredited|NAAC Accredited with 'A' Grade |An Autonomous Institute )

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# Steganography in Colour Images with Proposed Arnold Chaotic Map and Optimized Curvelet Transform

Sanjay Nipanikar, Rohini Nipanikar, and Mahesh Kulkarni

**Abstract** Steganography seems to be the process of concealing secret information within a non-secret file or communication to prevent discovery; this hidden information is then retrieved at its destination. Steganography could be used in conjunction with encryption to conceal or safeguard data. As a result, numerous researchers have concentrated their efforts in this field in order to offer safe data transfer. In addition, we proposed a unique strategy called steganography in colour pictures with proposed Arnold chaotic map and optimized curvelet transform which has two working stages: image embedding and image extraction. In the first stage, the 3-level DWT with curvelet transform is being used to embed the original picture with a watermarking image which uses self-improved Aquila optimization (SIAO) to get the better performance by optimizing the scaling factors. During the embedding phase, in the scrambling process, proposed Arnold chaotic map is used to scramble the image. In the second stage, the water marks get extracted from this water marking images by inverse 3-level DWT. Consequently, secret image was generated by applying inverse Arnold chaotic map transforms on the cover image. The performance of proposed work is compared over the other conventional models like existing Aquila optimizer, cat swarm optimization, spider monkey optimization, poor rich optimization, etc., which shows that our proposed steganography technique has greater performance.

**Keywords** Steganography · Image embedding · Arnold chaotic map transform · 3-level discrete wavelet transform · Self-improved Aquila optimization

S. Nipanikar (✉)
TSSM's PVPIT, Pune, Maharashtra, India
e-mail: sanjaynipanikar99@gmail.com

R. Nipanikar · M. Kulkarni
Rajgad Dnyanpeeth Technical Campus, Pune, Maharashtra, India

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**Abstract** Steganography seems to be the process of concealing secret information within a non-secret file or communication to prevent discovery; this hidden information is then retrieved at its destination. Steganography could be used in conjunction with encryption to conceal or safeguard data. As a result, numerous researchers have concentrated their efforts in this field in order to offer safe data transfer. In addition, we proposed a unique strategy called steganography in colour pictures with proposed Arnold chaotic map and optimized curvelet transform which has two working stages: image embedding and image extraction. In the first stage, the 3-level DWT with curvelet transform is being used to embed the original picture with a watermarking image which uses self-improved Aquila optimization (SIAO) to get the better performance by optimizing the scaling factors. During the embedding phase, in the scrambling process, proposed Arnold chaotic map is used to scramble the image. In the second stage, the water marks get extracted from this water marking images by inverse 3-level DWT. Consequently, secret image was generated by applying inverse Arnold chaotic map transforms on the cover image. The performance of proposed work is compared over the other conventional models like existing Aquila optimizer, cat swarm optimization, spider monkey optimization, poor rich optimization, etc., which shows that our proposed steganography technique has greater performance.
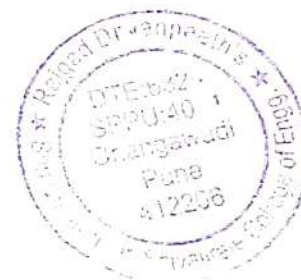
**Keywords** Steganography · Image embedding · Arnold chaotic map transform · 3-level discrete wavelet transform · Self-improved Aquila optimization

S. Nipanikar (✉)
TSSM's PVPIT, Pune, Maharashtra, India
e-mail: sanjaynipanikar99@gmail.com

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Dr. (Prof) B. K. Sarkar, Dr. (Prof) Reena Singh, Mimi Cherian, Dr. M. Arvind Kumar

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# Description

As the world undergoes rapid technological advancements and societal shifts, the landscape of education is evolving to meet the demands of a changing global environment. This paper explores the paradigm shift towards digital education and its implications for preparing individuals to thrive in an ever-evolving world. themes such as digital literacy, online learning platforms, personalized learning experiences, and the role of technology in fostering critical thinking and problem-solving skills. the challenges and opportunities associated with the digitalization of education, including issues of accessibility, equity, and the need for innovative pedagogical approaches. The abstract concludes by emphasizing the necessity of adapting educational systems to the digital age, ensuring that learners are equipped with the skills and knowledge needed to navigate and contribute meaningfully to the complexities of our changing world.

Keywords: digital education, online learning, digital literacy, personalized learning, technology in education, critical thinking, problem-solving, educational technology, accessibility, equity, innovative pedagogy.

# About the Authors

Dr. (Prof) B. K. Sarkar
Dr. (Prof) Reena Singh
Mimi Cherian
Dr. M. Arvind Kumar

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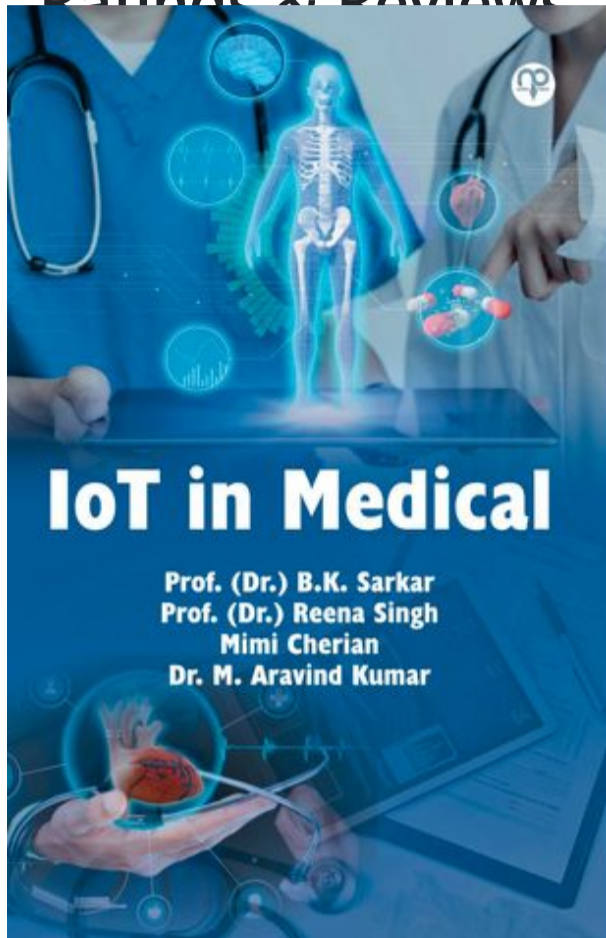
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# Digital Education for a Changing World

T. M. Dudhane

tmdudhane@gmail.com

SCSCOE, Pune

Jyoti J. Bandal

bandal864@gmail.com

SCSCOE, Pune

Pradip V. Taware

taware.pradiprdtccoe@gmail.com

SCSCOE, Pune

Reshma R. Zende

reshmabhosale26@gmail.com

SCSCOE, Pune

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Keywords: digital education, online learning, digital literacy, personalized learning, technology in education, critical thinking, problem-solving, educational technology, accessibility, equity, innovative pedagogy.

## 1.Introduction

In the 21st century, education is undergoing a profound transformation driven by global shifts that transcend geographical and cultural boundaries. The advent of the digital age, characterized by unprecedented technological advancements and the omnipresence of the internet, has ushered in

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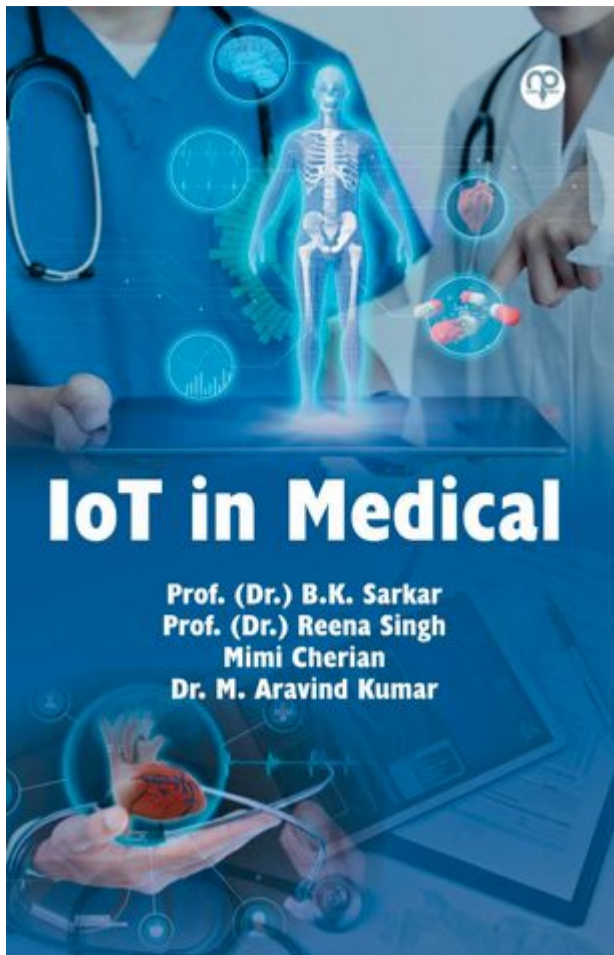


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The development of computational methods for solving large - scale optimization problems, such as those arising in logistic and supply chain management

Dr. (Prof) B. K. Sarkar, Dr. (Prof) Reena Singh, Mimi Cherian, Dr. M. Arvind Kumar

**Type:** e-book
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# Description

The recent developments and innovations in computational methods tailored for solving largescale optimization problems inherent in the domains of logistics and supply chain management.
As these industries grapple with the challenges of increasing complexity, globalization, and the need for real-time decision-making, the demand for efficient optimization techniques has grown significantly. The paper delves into the theoretical foundations of optimization algorithms, their implementation details, and their practical applications in optimizing various facets of logistics and supply chain networks.
Keywords: Large-Scale Optimization, Logistic and Supply Chain Management, Computational Methods, Convex Optimization, Machine Learning

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# The development of computational methods for solving large-scale optimization problems, such as those arising in logistic and supply chain management.

Kale J. G
SCSCOE, Pune
nilukale002@gmail.com
Farfade G. H
SCSCOE, Pune
mathsrdtc123@gmail.com
Tapare S. P
SCSCOE, Pune
tapare.rajjad11@gmail.com

## Abstract

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Keywords: Large-Scale Optimization, Logistic and Supply Chain Management, Computational Methods, Convex Optimization, Machine Learning

## 1.Introduction

In the contemporary landscape of business and industry, the effective management of logistics and supply chains is paramount for ensuring operational efficiency and competitiveness. The intricacies of these systems often give rise to complex challenges that demand sophisticated solutions. One such critical area is the optimization of large-scale logistics and supply chain operations, where computational methods play a pivotal role in addressing the multifaceted issues that arise.

The exponential growth of global trade and the increasing complexity of supply chain networks have led to a surge in the size and intricacy of optimization problems encountered by businesses. These challenges range from optimizing inventory levels, minimizing transportation costs, and streamlining distribution networks to scheduling production processes efficiently. Tackling these large-scale optimization problems manually is often impractical due to the sheer volume of variables and constraints involved. Therefore, the integration of computational methods has become indispensable for developing effective and scalable solutions. the realm of computational methods specifically tailored for solving large-scale optimization problems in logistics and supply chain management. By leveraging mathematical models, algorithms, and advanced computing technologies, researchers and practitioners aim to devise strategies that enhance decision-making processes, reduce operational costs, and improve overall supply chain performance.

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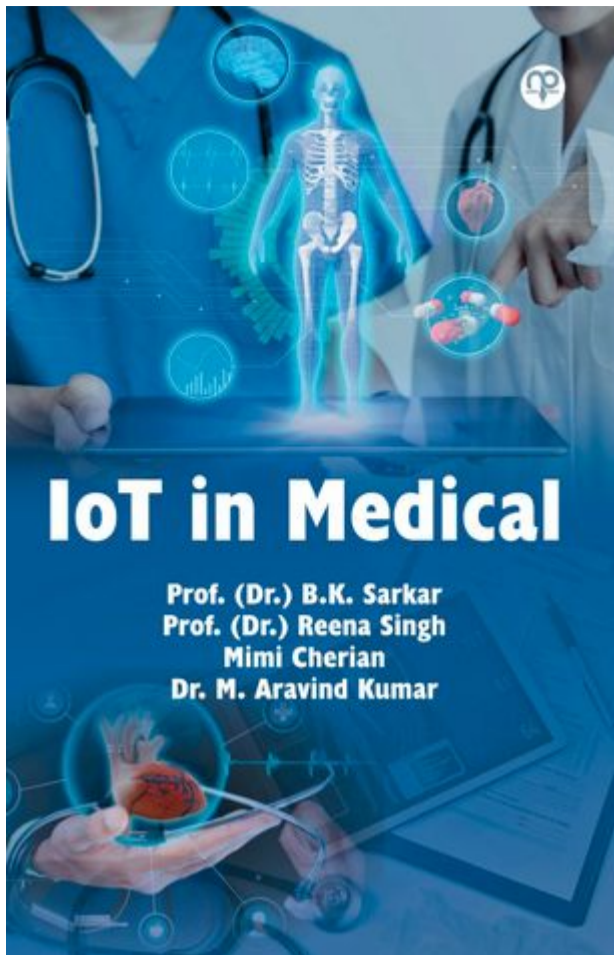
## IoT in Medical (eBook)
### Modern Education Society and Culture

Dr. (Prof) B. K. Sarkar, Dr. (Prof) Reena Singh, Mimi Cherian, Dr. M. Arvind Kumar

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The intersection of modern education, society, and culture represents a dynamic and evolving landscape that continuously shapes the way individuals perceive, interact, and contribute to the world. This abstract delves into the multifaceted connections between modern education systems and their profound influence on the broader societal and cultural fabric.

In the contemporary era, education serves as a catalyst for societal progress, fostering critical thinking, technological advancements, and global interconnectedness. The abstract explores how educational institutions, policies, and practices contribute to the formation of a knowledge-driven society, influencing economic development, social mobility, and the cultivation of informed citizens. The impact of digital technologies, online learning platforms, and artificial intelligence on educational paradigms is considered, with an emphasis on how these innovations redefine traditional notions of teaching and learning.

Keywords: modern education, society, culture, globalization, cultural diversity, educational paradigms, societal norms, inclusivity, cultural identity, interdisciplinary analysis.

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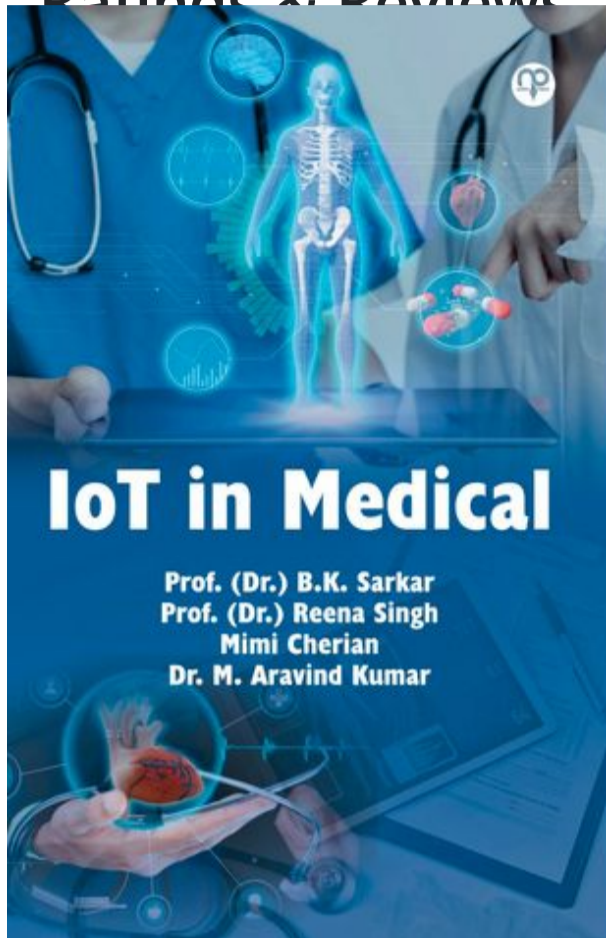
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# Modern Education Society and Culture

Digvijay Shelke

digshelke@gmail.com

SCSCOE, Pune

Lahu Maskepatil

lahu.maskepatil@gmail.com

SCSCOE, Pune

Nilesh Bagul

ndb@rajgad.edu.in

SCSCOE, Pune

Sagar Jagtap

jagtapsagarv@gmail.com

SCSCOE, Pune

Shilpa Gole

shilpagole25@gmail.com

SCSCOE, Pune

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1. Introduction

In the 21st century, the synergy between modern education, society, and culture has become a focal point of examination, reflecting a dynamic interplay that significantly shapes the way individuals perceive, engage with, and contribute to the world. Education, once primarily viewed as a means to acquire knowledge and skills, now stands as a cornerstone for societal advancement and cultural evolution.
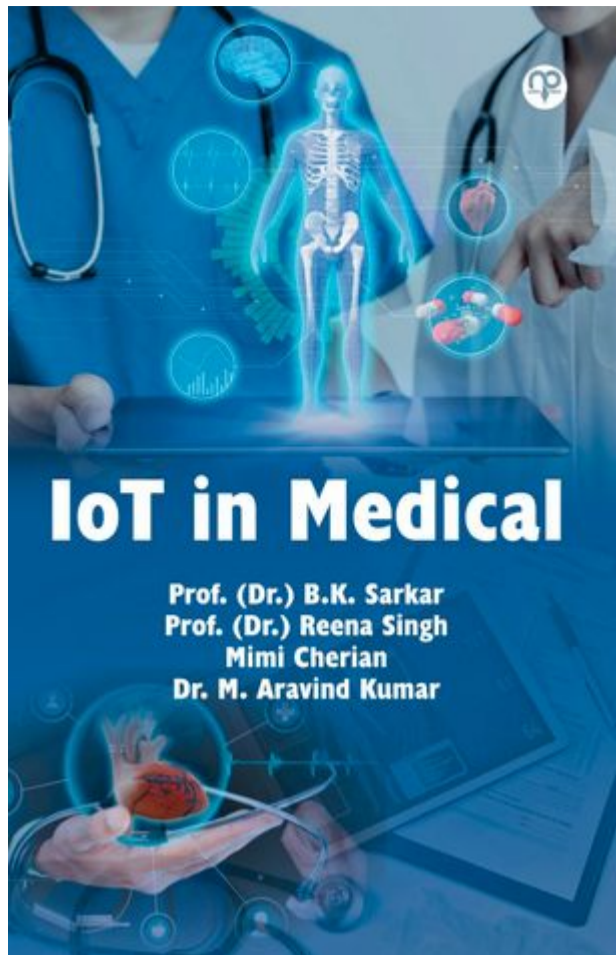
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## Digital Management Method and Process

Dr. (Prof) B. K. Sarkar, Dr. (Prof) Reena Singh, Mimi Cherian, Dr. M. Arvind Kumar

**Type:** e-book
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In the rapidly evolving landscape of digital technologies, effective digital management has become imperative for organizations to stay competitive and ensure sustainable growth. This paper introduces an integrated methodology that synthesizes various aspects of digital management into a cohesive and streamlined process framework. The proposed approach addresses key challenges in digital asset organization, data security, workflow optimization, and strategic decision-making.
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Dr. (Prof) B. K. Sarkar
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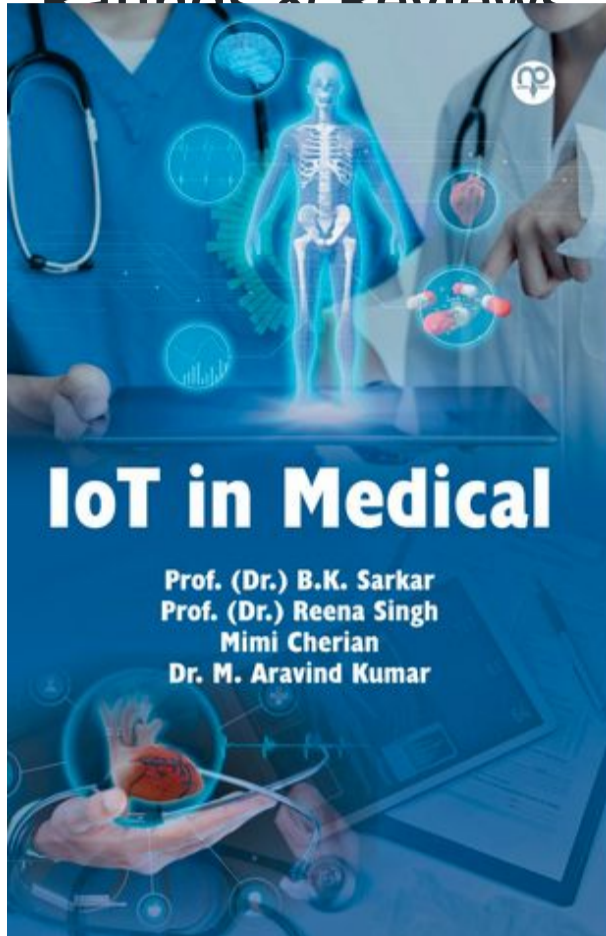
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# Digital Management Method and Process

Geetanjali Yadav
ygeetanjali21@gmail.com
SCSCOE, Pune
Kaustubh Juare
kaustubhjuare1@gmail.com
SCSCOE, Pune
Niklesh Kank
nikleshkank@gmail.com
SCSCOE, Pune
Shital Salunkhe
shitalpsalunkhe@gmail.com
SCSCOE, Pune

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## 2. Literature review

Digital Transformation and Organizational Strategy:
The concept of digital transformation has gained prominence as organizations seek to align their operations with the digital age. Scholars (Smith et al., 2018; Westerman et al., 2014) emphasize the pivotal role of strategic alignment in achieving successful digital transformations. Understanding how digital management integrates with overarching organizational strategies becomes crucial for sustained success in today's dynamic business environment.
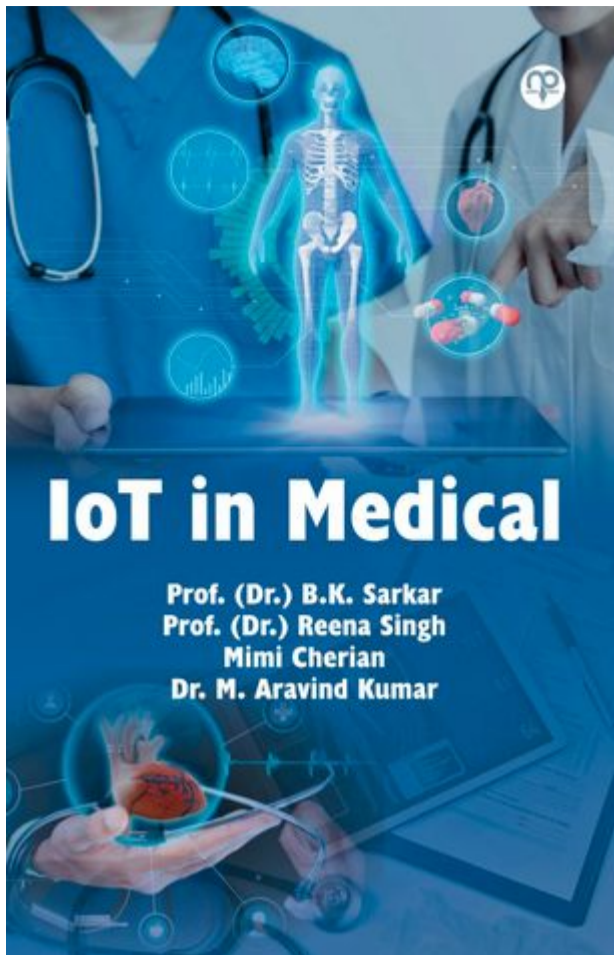
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### Modern Education for a changing world

Dr. (Prof) B. K. Sarkar, Dr. (Prof) Reena Singh, Mimi Cherian, Dr. M. Arvind Kumar

**Type:** e-book
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## Description

The dynamics of modern society have significantly transformed the landscape of education, shaping a cultural and ethical framework that influences the way knowledge is acquired, disseminated, and applied. This abstract delves into the multifaceted relationship between education, society, culture, and ethics in contemporary contexts. It explores the reciprocal impact of societal norms and values on educational systems, as well as the role of education in shaping cultural identities and ethical perspectives. The abstract also examines the challenges and opportunities presented by the intersection of modern education, societal expectations, cultural diversity, and ethical considerations. By understanding these interconnections, stakeholders in education can navigate the complexities of preparing individuals for an ever-evolving global landscape.

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# Modern Education for a changing world

Komal Khamkar

kkskhamkar@gmail.com

SCSCOE, Pune

Bhagwan Thorat

bhagwan.thorat@gmail.com

SCSCOE, Pune

Pradnya Shinde

pradnya2206@gmail.com

SCSCOE, Pune

Nagnath Dolare

prof.nagnathdolare@gmail.com

SCSCOE, Pune

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Keywords: Modern education, society, culture, ethics, educational systems, cultural diversity, ethical considerations, technology in education, inclusive education.

## 1. Introduction

In the tapestry of human civilization, education, society, culture, and ethics are interwoven threads that collectively shape the fabric of our shared existence. As we navigate the complexities of the modern era, the symbiotic relationship between education and its societal context becomes

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Wain, Tyler

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The field of Very Large-Scale Integration (VLSI) has witnessed unprecedented growth and innovation in recent years, driven by advancements in semiconductor technology. This research paper explores the latest trends and research challenges in the application of VLSI, shedding light on the transformative impact of VLSI in various domains. The paper reviews recent developments in VLSI applications such as Internet of Things (IoT), artificial intelligence, edge computing, and 5G communication. It delves into the design methodologies, tools, and architectures that enable the integration of millions to billions of transistors on a single chip. Additionally, the paper discusses the challenges faced by researchers and industry professionals in pushing the boundaries of VLSI technology, including power consumption, thermal issues, security concerns, and the demand for novel fabrication techniques. The research paper aims to provide a comprehensive overview of the cutting-edge applications of VLSI, identify emerging trends, and outline the key research challenges that need to be addressed for the continued advancement of VLSI...

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# About the Authors

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# Application of VLSI: Recent Trends and Research Challenges of VLSI

Sanjay I. Nipanikar

sanjaynipanikar99@gmail.com

SCSCOE, Pune

Sandeep R. Nalage

sandeepnalage@gmail.com

SCSCOE, Pune

Sachin R. Mahajan

smahajan733@gmail.com

SCSCOE, Pune

Sandhya S. Nalage

sandhyanalage84@gmail.com

SCSCOE, Pune

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Keywords: VLSI, Very Large-Scale Integration, semiconductor technology, IoT, artificial intelligence, edge computing, 5G communication

1.introduction

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Thorough examination of the current state, advancements, and challenges in the field of electric and hybrid vehicles. The rapid depletion of fossil fuel resources and growing environmental concerns have driven the automotive industry to seek sustainable alternatives. Electric and hybrid vehicles have emerged as promising solutions, with advancements in battery technology, powertrain design, and infrastructure development contributing to their increased adoption. This paper reviews the key technologies underpinning electric and hybrid vehicles, explores the environmental benefits, and delves into the challenges hindering their widespread adoption. Additionally, the research paper discusses government initiatives, industry trends, and potential future developments, aiming to offer a comprehensive understanding of the current landscape and future prospects of electric and hybrid vehicles.

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## Electric and Hybrid Vehicles

Dr. Sumod Pawar
sumodpawar@gmail.com
SCSCOE, Pune
Mangesh Bankar
mbbankar89@gmail.com
SCSCOE, Pune
Shrikant Khemkar
shrikantkhemkar@gmail.com
SCSCOE, Pune
Vishwajit Jadhav
jadhavvt0@gmail.com
SCSCOE, Pune
Rahul L. Thombare
rahulthombare2019@gmail.com
SCSCOE, Pune

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# Description

Surveying and leveling are essential techniques in civil engineering and land development, providing accurate measurements and data crucial for construction and infrastructure projects. This abstract explores the fundamental concepts and methodologies involved in surveying and leveling, emphasizing their significance in ensuring precise geometric and spatial information. Key aspects of surveying, such as the use of total stations, theodolites, and GPS technologies, are discussed to highlight the evolution and integration of modern tools. Additionally, the abstract delves into leveling techniques, including differential leveling and trigonometric leveling, showcasing their applications in establishing elevations and contours. The importance of accurate surveying and leveling in minimizing errors, optimizing resource utilization, and facilitating informed decisionmaking in construction projects is underscored. As the field continues to advance with technology, the abstract also touches upon emerging trends, such as LiDAR and drone-based surveying, shaping the future of surveying and leveling practices. Overall, this abstract provides a comprehensive overview of surveying and leveling, offering valuable insights for professionals, researchers, and...

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## Surveying and Levelling

1. **Prof. Prajwal Gaikwad**

    prajwalgaikwad707@gmail.com

    SCSCOE, Pune

2. **Rucha Divekar**

    ruchacdivekar@gmail.com

    SCSCOE, Pune

3. **Poonam Gaikwad**

    poonamgaikwad@gmail.com

    SCSCOE, Pune

4. **Sushama Jadhav**

    jadhav.sush29@gmail.com

    SCSCOE, Pune

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Machine learning is one of the older areas of artificial intelligence and concerns the study of computational methods for the discovery of new knowledge and for the management of existing knowledge. Machine learning methods have been applied to various application domains. However, in the few last years due to various technological advances and research efforts (e.g. completion of the Human Genome Project, evolution of the Web), new data have been available and consequently new domains where machine learning can be applied have been arisen. Some of these modern applications are learning from biological sequences, learning from email data, and learning in complex environments such as Web. three application domains as well as some recent efforts, where machine learning techniques are applied in order to analyze the data provided by these domains.

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# Applications of Machine Learning

1. Bhakti Bhatti
bhakti.bhatti334@gmail.com
SCSCOE, Pune

2. Priyanka Kedge
Id-piyakedage@gmail.com
SCSCOE, Pune

3. Sayli Dighe
sonawanesayali38@gmail.com
SCSCOE, Pune

4. Priyanka Varpe
priyankagire2004@gmail.com
SCSCOE, Pune

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Keywords Bioinformatics, Learning from Email, Machine Learning, Reinforcement Learning

## 1.introduction

The concept of a cognitive system revolves around its ability to comprehend the intricacies of its environment through the construction of a simplified interpretation termed as a model. This process of model construction is encapsulated within the realm of inductive learning. Furthermore, a cognitive system showcases its adeptness in organizing experiences by creating new structures referred to as patterns. When a cognitive system utilizes a dataset to construct models and patterns, this endeavor is recognized as machine learning.

Machine learning tasks can be broadly categorized into two groups: supervised learning and unsupervised learning. In supervised learning, the cognitive system endeavors to learn a