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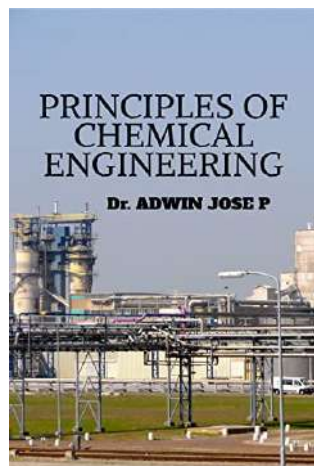
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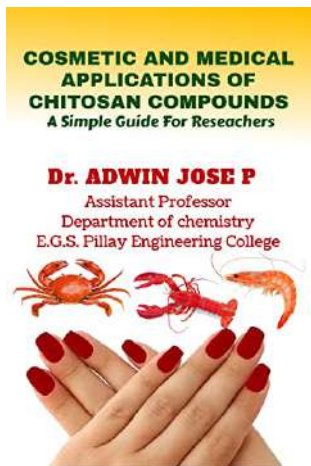
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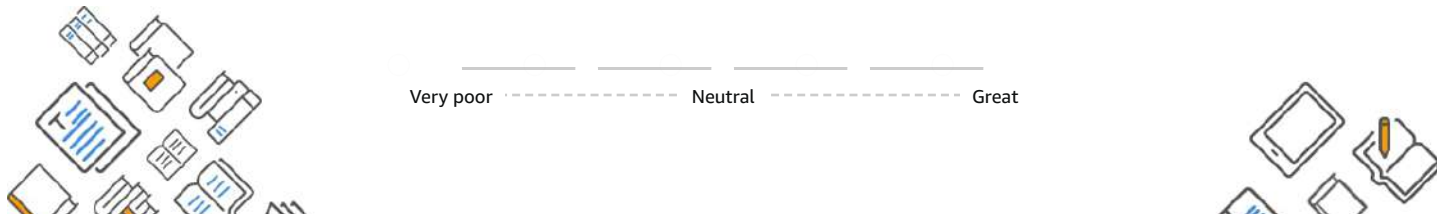
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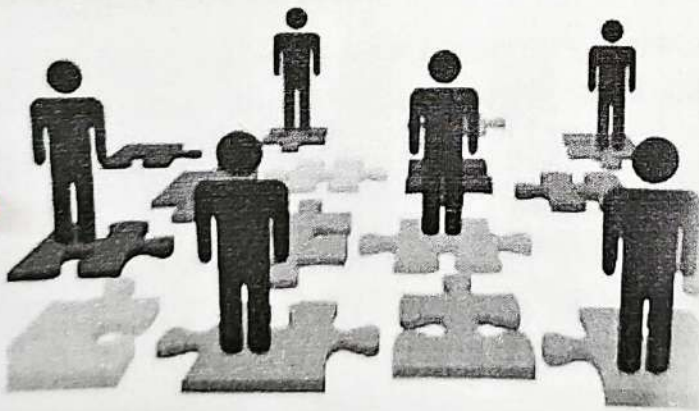
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Abstract

Blockchain technology and the cryptocurrency are most important features in the modern investment world. Many youngsters are started to learn cryptocurrency and in what way it is different from fiat currency. Investors find another avenue to invest their hard earned money for multiple returns. Investor must know how cryptocurrency works in Blockchain technology. Transferred and currency traded before investing on it. Though there is investment made by various investors in different countries, but few countries like India does not accept the cryptocurrency and also not encourage younger to invest on it. The reason behind the poor welcome of cryptocurrency in India is no regulation body and decentralized currency transaction mechanism. Also the crypto asset is high in volatility, scammed and hacked by various persons. So the investors must thoroughly aware about the cryptocurrency blockchain, miners, token and various crypto currencies used in digital crypto world.

Keywords: cryptocurrency, blockchain, miners, token, bitcoin, etherium
Introduction

Satoshi Nakamoto described about the implementation of bitcoin used blockchain technology as a digital currency in 2008. Cryptocurrencies decentralized digital money that's based on blockchain technology. There are more than 6000 different crypto currencies in circulation including Bitcoin, Etherium.

Cryptocurrency

Crypto currency is a digital payment system that doesn't rely on banks to process transactions. It's a peer-to-peer system that can enable anyone anywhere to send and receive payments. Instead of being physical money carried around and exchanged in the real world, cryptocurrency payments exist purely as entries to an online database describing specific transactions. When cryptocurrency funds are transferred, the transactions are recorded in a ledger. Cryptocurrency is stored in digital wallets. Cryptocurrencies are safe because it uses encryption to verify transactions.

cryptocurrencies such as bitcoin, etherium, BNB, Tether, Solana, XRP, Terra, Polkadot and more.

Blockchain

A blockchain is an open, distributed ledger that records transactions in a practice, it's a little like a checkbook that's distributed across multiple computers around the world. Transactions are recorded in "blocks" that are then linked together on a "chain" of previous cryptocurrency transactions. Blockchain is the underlying technology that many cryptocurrencies - like Bitcoin and Ethereum - operate on, but its unique way of securely recording and transferring information has broader applications outside of cryptocurrency.

Blocks

Every chain consists of multiple blocks and each block has three basic elements:

- The data in the block.
- A 32-bit whole number called a nonce. The nonce is randomly generated when a block is created, which then generates a block header hash.
- The hash is a 256-bit number wedded to the nonce. It must start with a large number of zeroes (i.e., be extremely small).

When the first block of a chain is created, a nonce generates the cryptographic hash. The data in the block is considered signed and forever tied to the nonce and hash unless it is mined.

Miners

Miners create new blocks on the chain through a process called mining. In blockchain every block has its own unique nonce and hash, but one miner's hash of the previous block in the chain, so mining a block isn't just, especially on large chains. The average bitcoin transaction involves several confirmations from miners that the block can be published and it takes ten to 15 minutes to a day or more to complete (Tewiner, 2020). This approach to mining consensus to add blocks is also called Proof of Work. Blocks Miners use special software to solve the incredibly complex math problem of finding a nonce that generates an accepted hash. Because the nonce is only 32 bits and the hash is 256, there are roughly four billion possible nonce-hash combinations that must be mined before the right one is found. When that happens, miners are said to have found the "golden nonce" and their block is added to the chain.

Making a change to any block earlier in the chain requires re-mining every block with the change, but all of the blocks that come after. This is why it's extremely difficult to manipulate blockchain technology. The degree of difficulty in tampering with blocks rises with the number of participants in the network because a successful attack would require hacking every node in the distributed ledger to change them all simultaneously. Also, it's not just that it's a safety in math, since finding golden nonce requires a tremendous amount of time and computing power. When a block is successfully mined, it's accepted by all of the nodes on the network and the network is updated financially.

Chapter-08

CHALLENGING POSITION OF INDIA'S ECONOMY AND MITIGATION ACTION TAKEN BY GOVERNMENT – A CRITICAL ANALYSIS IN ECONOMIC PERSPECTIVE

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Abstract- The Indian economy is facing another hit due to this unexpected and uninvited pandemic throughout the world. It was really a shock to the Indian economy and government struggles to protect the economy and the citizens of the country. To protect the people from the covid19, the government initiated sudden lockdown which affected the economy heavily. Many organized sector locked their industries and stopped the employees come to factory. Migrant workers started to move to their hometown due to unemployment issues. There was a heavy loss to the industries such as hospitality, airlines, tourism, automobile, real estate, construction and more. The government vaccinated people to protect from the virus and recover the India economy.

Keywords: covid19, Indian economy, migrant workers, inflation, interest rate, GDP

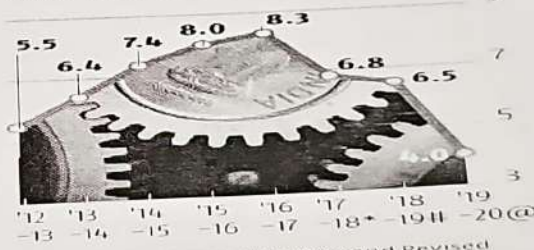
I. Introduction

The unforeseen COVID 19 pandemic has made lot of difficulties in the lives of the world. Many lost their lives and job opportunities, which drastically changed the economic status of the family. Huge disruptions on social and economic positions of the people are at danger of falling into shortage of food, while many children were malnourished. Millions of the industries are in trouble of making their business successful and give opportunities for the employees. Nearly 10 billion employees lost their jobs and social status. Families from unorganized sector are having difficulties in survival of running their day to day life. The vulnerable position of unorganized and informal workers leads to lack of social protection, indefinite jobs and poor quality health care. The countrywide shutdown has brought an immediate end to almost all economic activities. The instability of demand and supply powers is continuing even after the lifting of the lockdown. The Indian economy will need time to return to its normal state. India's growth fell to 3.1 percent in the fourth quarter of the fiscal year 2020, according to the Ministry of Statistics[1]. During continuous lockdown, families suffered to feed to their wards and earn money for day to day expenses. The scrupulous effort taken by the government through educating people against the impact

of covid19 and vaccinated them made a little relief from the haunting behaviour of covid19.

India's Economic Position before Covid19 Impact The government reworked downwards the economic growth rate for 2019-20 to 4 per cent from 4.2 per cent which is predicted earlier, mainly due to reduction in non primary sectors like production and formation [2]. "In 2018-19 the GDP growth rate was 6.5 per cent and the 2019-20 was 4.0 per cent according to National Statistical Office. Compare to 2018-19, the period of 2019-20 was relatively lesser growth in the areas like constructions, financial services, automobile, textile and constructions.

THE TRAJECTORY



*Third Revised Estimates; #Second Revised Estimates; @First Revised Estimates
Source: Ministry of Statistics & Programme Implementation

During 2019-20, the growth rates of the primary sector (comprising agriculture, forestry, fishing and mining and quarrying), secondary sector (comprising manufacturing, electricity, gas, water supply and other utility services, and construction) and tertiary sector (services) have been estimated as 3.3 per cent, (-)1.1 per cent and 7.2 per cent as against a growth of 2.2 per cent, 5.8 per cent, and 7.2 per cent, respectively, in the previous year. Nominal net national income at current prices for 2019-20 stands at Rs 179.94 trillion as against Rs 167.05 trillion in 2018-19, showing a growth of 7.7 per cent as against a rise of 10.3 per cent in the previous year. Per capita income i.e. per capita net national income at current prices is estimated at

Chapter-09

A CONCEPTUAL FRAMEWORK ON THE IMPACT OF COVID 19 ON TECHNOLOGY

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Abstract- A pandemic caused by the novel corona virus (COVID-19) is causing an unparalleled condition for the world's health services. Health, local communities, and government are harmfully affected by the COVID-19 pandemic. In addition, on January 21, 2020, the WHO urgent situation Committee confirmed a global health emergency because of rising numbers of COVID-19 case warning from countries abroad. The arrival of technology has spurred noteworthy changes in many aspects of our lives and enhanced the replace of information, the presentation of data, and the organization of medical possessions through telemedicine. The Covid-19 pandemic has led to a predictable rush forward in the use of digital technologies due to the social distancing norms and countrywide lockdowns. People and organizations all over the world had to adjust to new ways of work and life.

Key words: *Pandemic, local communities, technology, telemedicine, predictable, distancing norms.*

I. INTRODUCTION

A raise in digitalization is most important organizations and educational institutions to move to work-from-home. Block chain technology will become important and will entail research on design and regulations. Place of work scrutinize and techno stress matter will become well-known with an increase in digital presence. Online fraud is likely to grow, the length of with investigate on managing security. The parameter of the internet, a key reserve, will be essential post-pandemic. With the increase of the pandemic, approximately all regions have implemented lockdowns, end down performance that need human gathering and interactions - including colleges, schools, malls, temples, offices, airports, and railway stations. The lockdown has resulted in the majority people taking to the internet and internet-based services to communicate, interrelate, and take on with their job responsibilities from home. Internet services have seen rises in usage from 40 % to 100 %, compared to pre-lockdown levels. Video-conferencing services like Zoom have seen a ten times increase in usage, and content delivery.

Use of Information systems and networks:

The lockdowns across countries have entailed a go up in the use of in order systems and networks, with

huge changes in practice patterns and usage behaviour. Workers are adjusting to new "normals" - with meetings leaving completely online, office work shifting to the home, with new emerging patterns of work. These changes have come across most organizations, whether in business, society, or government. The changes have also come abruptly, with hardly any time for organizations and community to plan for, get ready and put into practice new setups and preparations; they have had to regulate, try, trial, and find habits that did not survive previous to. In order and skill sector has managed to stay pandemic data up to date. For example, using community media to encourage public health operation is very effective.

There are a few pressure concerned with the consciousness of social media about the COVID-19 pandemic, such as wounded, pandemic diagnosis, and treatment options like COVID-19 vaccines or COVID-19 medicines given to the patients. All these factors physically and mentally created extra fear and nervousness within the public. This resulted in common confusion, dread buying of home stuff, hoarding of essential commodities by the traders, price increase, violence on the streets, discriminations, conspiracy thinking, etc.

Technological Companies:

Pandemics and epidemics are well thought-out to be threatening the human race frequently. However, large technical companies are working hard to decrease the spread of mistaken information. Google, YouTube, Instagram, and Facebook, for example, have worked diligently to straight the public to the most up-to-date, demonstrable information accessible through the WHO website.

Fifth-generation connectivity technologies and high-speed Internet with its attendant benefits were launched by meeting technologies such as mobile, cloud, and robots. Artificial intelligence, in exacting, has exposed to have a significant role in promoting physical condition, representative immunization techniques connecting understanding viral protein structure.

Based on the COVID-19 pandemic obtainable swelling rate data, it is quite multifaceted to decide whether SOPs have been practiced. The pandemic grows exotically and exponentially at a critical stage which is extreme for human computation to understand and analyze.

Chapter-17

EXECUTIVE DECISION MAKING DURING COVID-19 WITH TOPSIS METHOD, RECIPROCAL MATRICES WITH PAIRWISE COMPARISONS

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ABSTRACT: Problem-solving and decision-making are just different aspects of the same multi-stage goal-oriented cognitive process. Proof of this hypothesis by comparing stage by stage both the decision-making and problem-solving prescribed strategies and the description protocols. If indeed problem-solving and decision-making processes are homological, scientist, studying the same process from different perspectives, might be able to learn from each other and their dialogue may be facilitated through the common vocabulary are suggested here. The core of operations research is the development of approaches for optimal decision making. A prominent class of such problems is multi-criteria decision making (MCDM). The typical MCDM problem deals with the evaluation of a set of alternatives in terms of a set of decision criteria. This concepts provides a comprehensive survey of some methods for eliciting data for MCDM problems and also for processing such data.

KEYWORDS: *Problem-solving, Decision-making, Algorithm, Strategy, COVID 19, TOPSIS METHOD*

1. INTRODUCTION

The review of literature reveals that contemporary accounts of the relationship between problem solving (PS) and decision-making (DM) are contradictory and confusing. I present that PS and DM refer to the same process. Here I prove by comparing these processes stage by stage. Problem-solving is often considered to be based upon application of an algorithm, while decision making is considered to be based upon experience and intuition.

The division between "algorithmic" and "naturalistic" or experience-based thinking cannot serve as a basis of distinction between problem-solving and decision-making, as problems are often dealt with haphazardly and decisions are often made methodically, and vice versa. In fact, algorithms for problem-solving and decision-making bear striking resemblance.

Moreover, it is demonstrated that "naturalistic" problem-solving and decision-making patterns, both productive and unproductive, are similar. This chapter consists of the extension of the TOPSIS for group decision making under fuzzy environment with multi attribute decision making, Classification, Weighted sum model, Weighted product model, Revised Analytic

Hierarchy process, COVID-19 and also consists a Framework for executive decision making during COVID-19 with TOPSIS method, reciprocal matrices with pairwise comparisons and Conclusion. It concludes with a list of suggested definitions of the concepts relating to PS and DM.

2. LITERATURE REVIEW

Regarding the question of the relationship between problem-solving (PS) and decision-making (DM), no option has been eliminated from the current scholarly discourse. The full range of answers - from "they are the same" to "they have nothing in common" - all have their champions. Some claim that they overlap and argue about where the true division lies. Others claim that one is part of another or the other way around. In numerous articles, PS and DM related terms are interchangeable (Sadler and Zeidler, 2005; Lee and Grace, 2012; Papadouris, 2012).

Centkseven-Onder and Colakkadioglu (2013) present a survey of different perspectives on the relationship between PS and DM which are still relevant today. The authors note that some researchers argue that problem-solving and decision-making processes share similarities; thus, these concepts must be used together (Adair, 2010; Ivey et al., 1993; Churney, 2001). According to another popular opinion, decision-making and problem-solving are entirely different (Baron and Brown, 1991; Elstein and Schwartz, 2002; Isen, 2001). PS-oriented and DM-oriented researchers perceive these concepts and their interrelation differently. In a series of works dedicated to social PS, D'Zurilla (D'Zurilla and Goldfried, 1971; D'Zurilla and Chang, 1995; Nezu, D'Zurilla and Nezu, 2012) recognizes DM, or selecting the best solution out of many, as one of the five stages of PS. The conflict theory of decision making (Janis and Mann, 1977) sees systematic search for information, careful consideration of all viable alternatives and the unhurried, non-impulsive making of the final decision, in other word, PS, as one of the five DM-patterns.

Extension of the Topsis for Group Decision Making under Fuzzy Environment
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BUSINESS INTELLIGENCE AND IT'S APPLICATIONS GREEN HRM

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WHAT IS HUMAN RESOURCE MANAGEMENT?

Human resource management is a tactical approach to managing individuals in a company or an organisation in such a way that they assist the firm acquire a competitive edge. Its goal is to optimise the employee's performance in support of a company's strategic goals. In other words, Human resource management (HRM) is the practise of recruiting, hiring, deploying, and managing personnel in a business. "Human Resources Management" is frequently abbreviated as HRM or just HR.

STAGES OF HUMAN RESOURCES MANAGEMENT

Human Resource Management is phased up into three stages:

1. Acquisition,
2. Development and
3. Termination.

Acquisition Phase:

This is the first of the phases in the process of human resources administration. This is the stage in which the applicants are interviewed and ultimately chosen for the post. Earlier in the process, there may have been a pool of individuals that had applied for the job that was being sought by the company. Filtering and analysing applications and resumes received by the human resources department results in the selection of the most qualified candidates from among the rest. Applicants who have passed the screening process will be contacted by a representative from the organization's

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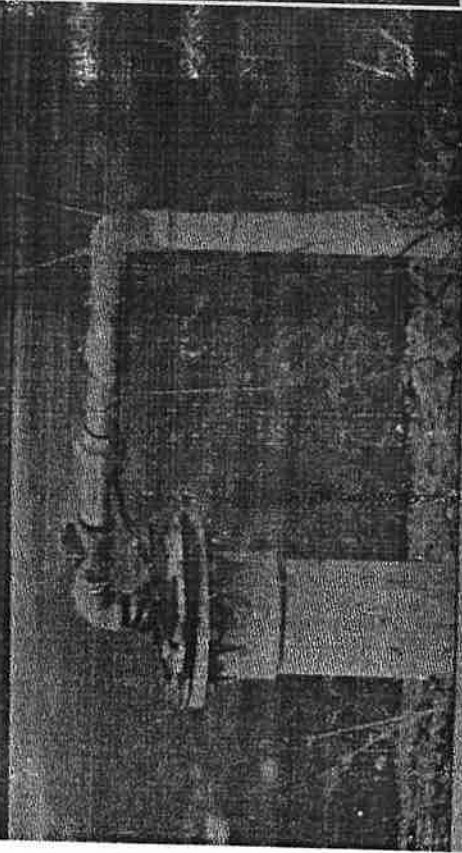
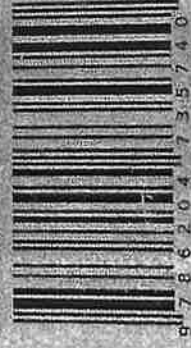


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2



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Abstract

Traditional businesses are transforming into cognitive business operations with convergence of technologies such as Cloud, Big Data, Artificial Neural Networks, and Machine Learning. As businesses all around the world become more dependable on technology and handle more data, the success of the business enterprises is greatly determined by the intelligent workflows that are automated, adaptable, and self-learning. Intelligent workflows play a vital



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Industrial Engineering

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Smart Manufacturing

Computational analysis of provisional study on white layer properties by EDM vs. WEDM of aluminum metal matrix composites

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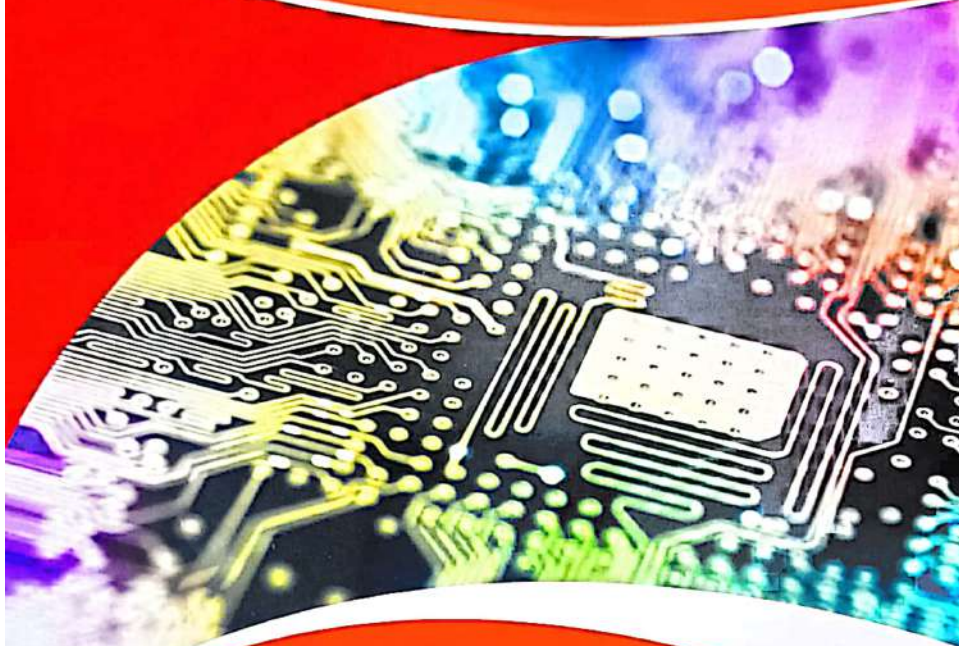
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5. An overview of major research areas in wire cut EDM on different materials (/WebPortal/ArticleView?wd=6ADE0255215BD01A872ACEF0168BB158B3F5D4CC6CCFCF8DA6AED26BBB57C3D9);Chaitanya Reddy;INCAS Bulletin,2020

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**S. SENTHILKUMAR | Prof.MRUNALINI BURADKAR
P.JEYA BRIGHT | K. R. KANNAN**

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INTRODUCTION TO PIC MICROCONTROLLER

MR. S. SENTHILKUMAR
DR. RAJEEV KUMAR SHAKYA
DR. YOGENDRA NARAYAN
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INTRODUCTION TO PIC MICROCONTROLLER

(for B.E./B.Tech)

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Deepq: Residue analysis of localization images in large scale solid state physical environments

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Deepq: Residue Analysis of Localization Images in Large Scale Solid State Physical Environments

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Abstract. Deep Learning is the process to led machine learning, natural language processing and neural networks. The various deep learning models, computer vision systems and artificial intelligence services are used to study of various real time applications. Due to lack of computing resource the conventional neural network are produces delay in progress and reduce the GPUs performance and throughput. In this paper we review difference deep learning approaches with increases GPUs performance and apply various image processing classification and localization techniques. The high availability and GPUs performance can be verified by state-of-arts results using conventional deep learning methods.

Keywords: Deep Learning, Computer Vision, GPU Performance, Classification, Localization, CNN Model, DeepQ Process

INTRODUCTION

Deep learning is the major division of machine learning and neural networks. Learning are played important role in access and processing information and produce real time results. But the normal methods are affects the throughput and GPUs performance. Deep learning process are includes the chip processing, dataset sizes, processing delays and performance [1]. Deep learning process has proven concept used in search engine, bio-informatics, robotics, industrial internet, multimedia applications, machine vision systems and game programming. In current scenario the conventional multi process environments leads compressed sensing and distributed multiuser sensing approaches [2]. The Bio-inspired computing is used to solve visual cortex, behaviours, small regions failures and multi-layer perception. The following figure 1 shows that the conventional neural network architecture and it produces the visual scheme annotation in each layers.

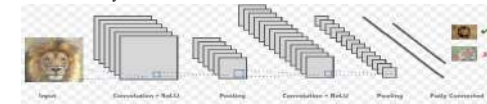


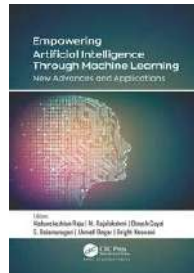
FIGURE 1. Conventional Neural Network – Deep Learn Model

The convolution and pool layers are used in conventional deep learning process for measuring local batches [3]. Each batch log collected by features of visual recognition inputs and processed by similar batches or predefined batch results. But this method could produce delayed in performance and reduced GPUs throughput[10]. The convolution layer shares the behaviours and regions specific results. The Pool layers produces after the result of convolution each logs recorded and used for decision making results. The Object recognition techniques applied in recent years for measuring online based trade marketing. Each log can be labelled for extracting features and fix the localization. Image annotation is important problem to set each localization values and it collect the information automatically and fix the artificial intelligence results. Natural Language processing and Computer Vision are dominating large number of public repositories. This paper describes following sections, section II describe various researches and literatures, section III handle deep learning process, section IV describes process and reviews and section V gives conclusion and future enhancements.

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Chapter



Artificial Intelligence in Education Using Gaming and Automatization with Courses and Outcomes Mapping

By S. Manikandan, M. Chinnadurai

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ABSTRACT



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Real-Time Video Tracking Framework With Moving Object Segmentation in Stream Data

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Abstract

Object tracking is an active application-oriented research topic. Analysis of video requires human operators to monitor human activities. This framework should be capable of detecting and tracking moving objects accurately. The unsupervised segmentation of moving objects affects the overall performance of an object tracking framework. The ideal aim of unsupervised segmentation method is to split the image into meaningful objects. In this proposed video tracking framework, initially, segmentation of the moving object with displacement vectors in an unsupervised manner is done. Using the displacement vector as a feature, the input frame segmentation is achieved with the Expectation–Maximization (E–M) technique. In this work, the E–M algorithm initialized with the number of objects present in the frame is obtained by clustering objects using the K-means clustering technique. The resulting objects obtained may contain shadows of the objects. Hence, shadow removal approach is used to remove shadows surrounding objects. Finally, the objects tracked using displacement vectors and the behaviour of objects are analyzed. The experiments on various datasets such as standard videos, surveillance videos, and nonstandard videos demonstrated, outperforms in single and multiple cases.

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Notes

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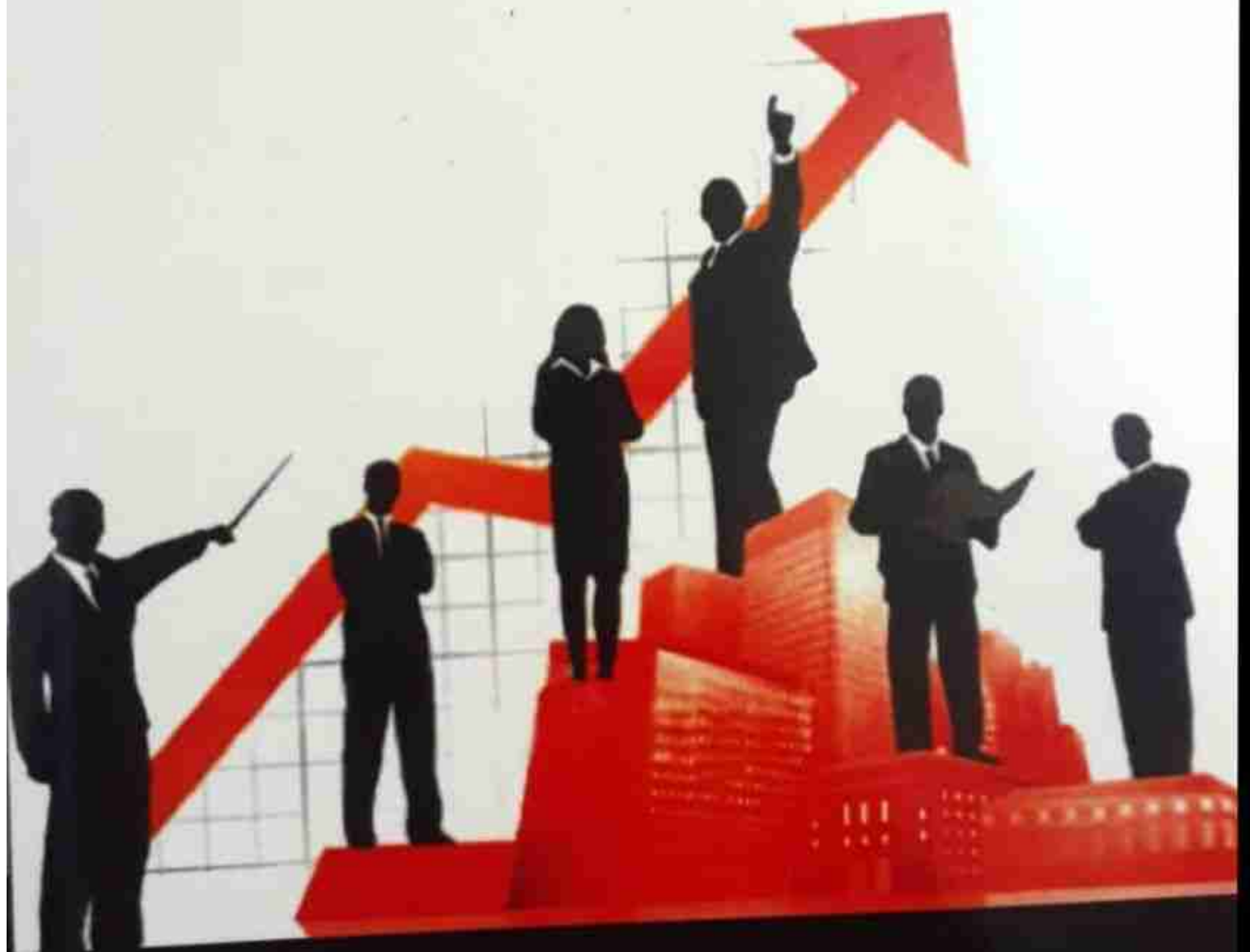
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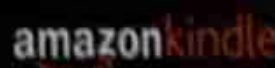
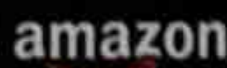
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PREFACE

SHRM is an acronym that stands for strategic human resource management. It refers to a method that is used to design and execute HR strategies that are linked with business plans and allow the firm to accomplish its goals. Conceptually speaking, strategic human resource management (HRM) refers to the process of achieving integration or "fit" between HR strategies and business strategies, the advantages of adopting a longer-term perspective of where HR should be headed and how to get there, as well as the formulation and execution of HR strategies that are consistent with one another and mutually supportive of one another. It is also about how members of the HR department should take a strategic approach on a day-to-day basis, which is an important aspect of the topic.

This indicates that they function as an integral member of the management team, make it a point to ensure that HR activities continuously contribute to the successful execution of business plans, and make it a point to be deliberately concerned with ensuring that their actions provide value.

To understand strategic HRM it is first necessary to appreciate the concepts of human resource management and strategy and the concept of strategic human resource management (strategic HRM) is then examined in detail in Chapter 1. Chapter 2 focuses on Social Environment and Staffing. Chapter 3 of the book is concerned with the HR Strategy: Development and Delivery. Chapter 4 covers Trends And Issues In SHRM. Chapter 5 focuses on the HRM at Global Perspective

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CHAPTER- 1

STRATEGIC MANAGEMENT AN

OVERVIEW

1.1 Introduction Strategic Human Resource Management (SHRM)

The term "Strategic Human Resource Management" refers to the process of integrating the strategic business objectives of an organisation with its human resources in order to encourage innovation, as well as to motivate employees, comfort, efficiency, and ultimately overall performance. The phrase "Strategic Human Resource Management" is relatively new. It distances itself from "conventional human resource management," which was just a function of a company.

Other Definitions of Strategic Human Resource Management include:

Strategic HRM is concerned with 'seeing the people of the organization as a strategic resource for the achievement of competitive advantage' (Hendry and Pettigrew, 1986).

'A set of processes and activities jointly shared by human resources and line managers to solve people-related business problems' (Schuler and Walker, 1990).

'The macro-organizational approach to viewing the role and function of HRM in the larger organization' (Butler *et al*, 1991).

'The pattern of planned human resource deployments and activities intended to enable an organization to achieve its goals' (Wright and McMahan, 1992).



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6

Surface Engineering for Enhanced Tribological Performance

Dr. Edward Anand E.

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 email: alphsedward@gmail.com, Mob.: 9843445487

ABSTRACT

Economic and technological progress, as well as environmental concerns, requires that modern equipment be designed with ever more stringent performance criteria, frequently pushing components to the very limits of their capabilities. One major consequence of this increased demand on performance is that tribological deficiencies, such as lubrication breakdown excessive wear and tribo-corrosion, can be significantly amplified, leading to unnecessary operational costs, decreased efficiency and premature failure. Because tribological processes result from the interaction of two or more bodies in relative motion in a particular environment, surface engineering can be used to confer to surfaces the high performance needed for demanding operational conditions. In this context, the design of the appropriate material system must be guided by an accurate understanding of the degradation mechanisms and the surface response to loading and deformation, frequently acting in synergy.

Solid Particle Erosion (SPE) occurs in situations where hard solid particles present in the environment are entrained in a fluid stream, and impact component surfaces. This type of damage is most prominent in the first stage of the aircraft engine, where the compressor blades can be eroded to such an extent that aerodynamic performance and even structural integrity are compromised. Consequently, much work has been done in academia and industry in order to understand the material loss mechanisms present in SPE and to develop protective technologies that will increase component lifetimes. One such technology is the use of hard protective coatings to impede the erosion of the predominantly metallic engine components.

Keywords: Solid particle erosion, Scanning electron microscope, Particle size, Sputtering, X-ray diffraction.

Introduction

The design of the appropriate material system for a given tribological solicitation must be guided by an accurate understanding of the degradation mechanisms and



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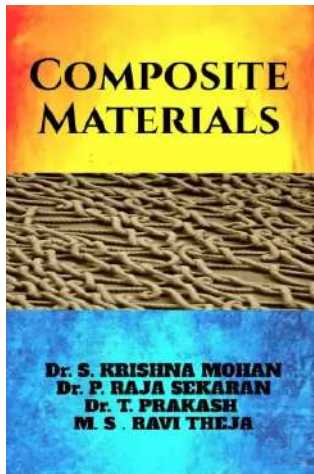
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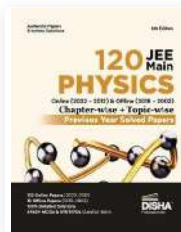
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Abstract

Cellulose nanofibers (CNFs) are linear polymer that exhibits high stiffness and strength due to extensive intermolecular and intramolecular hydrogen bonds among the molecules. These nano materials are taking place in replacing synthetic fiber as reinforcement in nanocomposites. This present work investigates the potential used of CNFs in improving microstructural and mechanical properties of

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Chapter I

Introduction

In today's scenario of higher education, placement is the buzz word. Parents and students prefer colleges and institutions which arrange placement opportunities by conducting campus placement and placement readiness training. Every college and institution tries to maximize their placement ratio. During the last decade, the opportunities for graduates in various sectors have increased tremendously, especially for engineering students¹. Institutions organize on-campus and off-campus placement and job fair by pooling students from various institutions, wherein companies recruit students in large number. However there are many graduates who are not able to get through the recruitment process and jobs.

UNESCO² observes that, Globalization has increased the pressure on companies to effectively manage their workforce and also their clients. This demands their focus on development of (a) generic skills; (b) application skills; and (c) soft skills or life skills apart from proficiency in their subjects. It involves oral and written communication skills, basic computer skills (MS Office, Internet, etc), and a good workplace attitude (commitment and teamwork). These skills are pre-requisites for employability of students.

Globalization has also increased the standards of education and career profiles. Multi national companies are opening in India and are looking for well trained employable individuals.³ Employers want much more than academic grades. At the least they expect the skills for team work, interpersonal relationship and good analytical ability. Today these soft skills are the most important qualification for any individual to communicate well and to get jobs. But it is a fact that even those graduates who are good at academic performance are not good in communication skills, and that is a hurdle for their career opportunities⁴.

1.1 Engineering Talent Pool

Every year India intakes around 3, 50,000 engineering graduates making India the second largest talent pool for engineers across the world. Dating back to the tech boom in the late 90's in India when IT companies

About the Author



Dr.S.CHANDRASEKAR is presently working as Chief Executive Officer of EGS Pillay Group of Institutions, Nagapattinam, Tamilnadu. He has completed his dual post graduation M.Com with Distinction from Government Arts College, Coimbatore and MBA from Bharathiar University, Coimbatore. He has also completed his research programme M.Phil in Commerce and Holds a Doctor of Philosophy in Commerce from Bharathiar University, Coimbatore. He has more than 21 years of teaching, Research, Administration, Placement experience in both India and abroad.

He was instrumental in promoting the spirit of entrepreneurship among the students and motivated 65 students to start their own business venture. He has visited more than 150 colleges as Chief guest, Resource person, Judge etc in Coimbatore, Pollachi, Palani, Dindugal, Andrapradesh, Kerala and Karnataka.

He is an recipient of Inspiring Minds Award by Aspiring Minds at National Employability Conclave, Best Coordinator Award by ICT Academy of Tamilnadu and Star Performer Award by Virtusa

He has rich experience in Training and Placement and has been instrumental in designing the skill based and industry oriented curriculum for effective placement of young students. He has been instrumental in enhancing employability skills of students in many colleges.

He was heading the Entrepreneurship Development Cell at CIMAT and organized more than 100 Entrepreneurship Awareness Camp, Business Plan Competition, Business Skill Development Programme EDP and many programmes on entrepreneurship.

He is a certified faculty to teach entrepreneurs by Stanford University, Entrepreneurship Development Institute of India, and has been recognized by Micro Small and Medium Enterprises as mentor to council and guide budding entrepreneurs in preparing business plan and opportunity identification.

As an entrepreneur he runs an event organizing company- Disha, Trust member of Sri Amman Industrial Training Center and Managing Partner of CNS Computer Education center.

He was also the past president of Junior Chamber International Coimbatore Cosmo an organization of worldwide federation of young entrepreneurs and leaders.



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Prediction of NO_x Concentration in the Vicinity of Cement Industry Employing AERMOD Dispersion Modeling



S. Anand Kumar Varma, K. R. Manjula, and Jayath Nayak

Abstract NO_x is one of the major pollutants that evolves from the cement industries during the high-temperature calcination in the rotary kiln. Air quality modeling techniques are cost effective than measurement but are data intensive as modeling requires emission and meteorological data. In the present study, the prediction of the concentration of NO_x in and around the area of UTRATECH cement Industry located at Tadipatri, Anantapur, India has been reported. A dispersion modeling technique AERMOD is used for the prediction of emission rate of criteria pollutants were obtained from supplier's specification and direct measurement. In Level 1, prediction and measurement of NO_x concentration for 24 hrs was performed where, in Level 2, assessment was carried out using refined AERMOD 9.1 model with site specific hourly data. Analytical results show that emission inventory obtained from supplier's specifications and direct measurement are comparatively equal. Predicted parameters of emission were evaluated for different key pollutants where previous emission data is not available. Yearly emissive flux were furnished from estimated values of emission factors and activity in the the study area. Low relative error (<0.05), high coefficient of regression (R² 0.8–0.95) and willmott-d-index (≥0.95) reflects the accuracy of the study.

Keywords Cement industry • NO_x • Modeling • AERMOD • Prediction

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On the Assessment of Microhardness and Microstructure of Electro Discharge Coated Magnesium Alloy

U. Elaiyaran^{1*}, V. Satheesh Kumar²,
C. Senthilkumar³, V. Navaneethakrishnan⁴

Abstract

Electrical discharge coating (EDC) is the surface modification process, is used to develop the hard composite coating on the workpiece surface with powder metallurgy electrode. In this present investigation, mixture of WC/Cu composite coating is deposited on the ZE41A magnesium alloy by using this technique. Parameters (compaction pressure, current and pulse on time) on micro hardness and microstructure are studied. EDC with low compaction pressured electrode, high current and pulse on time provides the higher material deposition rate (MDR) and micro hardness (MH). Further, deposited surface is characterized by scanning electron microscope (SEM) and energy dispersive spectroscopy (EDS). Craters and globules observed at deposited surface that affects the roughness.

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Deep Learning in Artificial Intelligence

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I. INTRODUCTION

Artificial Intelligence is the field of computer technology and which is used to apply various theories, models, methods, techniques and algorithms to simulate and develop intelligent systems. AI enables to solve real time problems by using computer and make intelligent decision. An algorithm is the main part for developing or solving real time problems and it is the step by step procedure at each stage. AI algorithms are set of procedure and used to perform intelligent behaviour and make successful decision using involvement of learning and perception. The main purpose of AI is to apply technology to real time situation and reduce the human efforts. The high level goal is to the user to exhibit perception behaviour to intelligent machine. Learning is the most important part for applying AI based solutions or automated environment. Learning can be done by perception of input behaviours at different environment. Deep learning is the most responsible part to recognize or percept following capabilities of intelligent system like problem solving, decision making, planning and reasoning, interaction and knowledge representation. Deep learning process is used to build, represent and analysis input behaviours and involves symbolic and neural forms to achieve knowledge representation. Knowledge representation is the important part in AI and which leads the role to make intelligent machine with decision making capabilities.

Machine learning and Natural Language processing is need to apply deep learning process. Machine learning techniques are used to analyse the behaviours be set of input characteristics. A successful intelligent AI system gives the ability to read, write, process and generate human and native user inputs. Nowadays Internet are playing important role in day-to-day life and includes information processing and analysing various inputs such as text, audio, video, etc. Handling internet request AI researchers are developed highly effective algorithms as well as computer vision techniques.

This paper mainly focuses on general techniques of AI with deep learning characteristics and gives historical view of current state of intelligent systems. Based on various survey we focused the AI can verifies different paradigms such as machine learning, agent interaction systems, natural language processing, etc. The core application of AI the above is need and most significant contribution in AI technology and deep learning.

II. THE FIRST ERA OF AI

The expert systems are started in engineering domain in 1970s and it devised computer programs based on pseudo code transition. Teach Pendent type of AI system involved in Expert application processing in telecommunication and commercial environments. In this case the capability of learning and converting new situation is difficult process. So the decision making process was not up to the level and solve the complex problem is tedious process. The expert systems developed in 1980s with the if-else statement t make decision with inference rule forms. Due to this stage the first AI system cannot handle real time data processing, language processing and chat based applications.

The researchers can decide machine learning based expert systems with the involvement of contributors and optimization produce to good software deliverables. According to the survey of Colorado University and Li Deng et al, the speech processing agent systems are in the field of 1990s to perform automated caller based response system. The author can contribute to transmitting from inference rule based mechanism to speech recognition system with the capable of data domain, knowledge and statistical approach.

III. THE SECOND ERA OF AI

The speech processing agents are used in real time application and which gives clear picture of learning and perception. Computer vision was played vital role for handling perception and knowledge request. According to defence based knowledge systems and NASA report the speech based agents are having autonomous behaviour and automated learning capabilities. In this case, the machine learning inputs and natural language processing are combined with deep learning representations. In such cases, AI system more focuses on trained input data and predefined algorithms. The real time input capturing agents are designed in 2000s with the key components such as decision trees, Bayesian networks, support vector machine, neural networks, etc. Generally the AI system performs various real time applications like face recognition, Bio-metrics process, speech processing, machine learning vision applications, etc.

Review of Momo attack in WhatsApp

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1. WHAT IS Momo?

Today the day to day life begins with mobile phone and 90% of peoples from the world using social media apps such as WhatsApp, Facebook, Twitter, Instagram, etc. Regular chatting and surfing at any place and sharing text, audio, image, video to others. The important of mobile usage now changed to sharing and chatting like video call, online sharing, shopping, etc. Recent days the we receive unknown message with the name of 'Momo' and they tell all the details of your details. So we suddenly shocked and get outdated details. Momo is not a attack and is the person already you known or unknown person creates duplicate account in the name other country person or other county numbers using mobile app and registered mobile OTP access. Normally the human minds set the unknown messages are received from WhatsApp and they shared your all the detail means we afraid and chat with Momo. Momo is not an attack it is private message or individual message from unknown number by your known person.

2. SOCIAL CHALLENGE

A recent social engineering scheme has spread across Latin America and could hit the borders of the United States. A WhatsApp contact called, "Momo WhatsApp" was posted on social media sites and has a Japanese area code and a photo displaying a bulging-eyed girl. Claims that interacting with the profile can incite youth suicide through coercion have been circulating around the Internet for days.

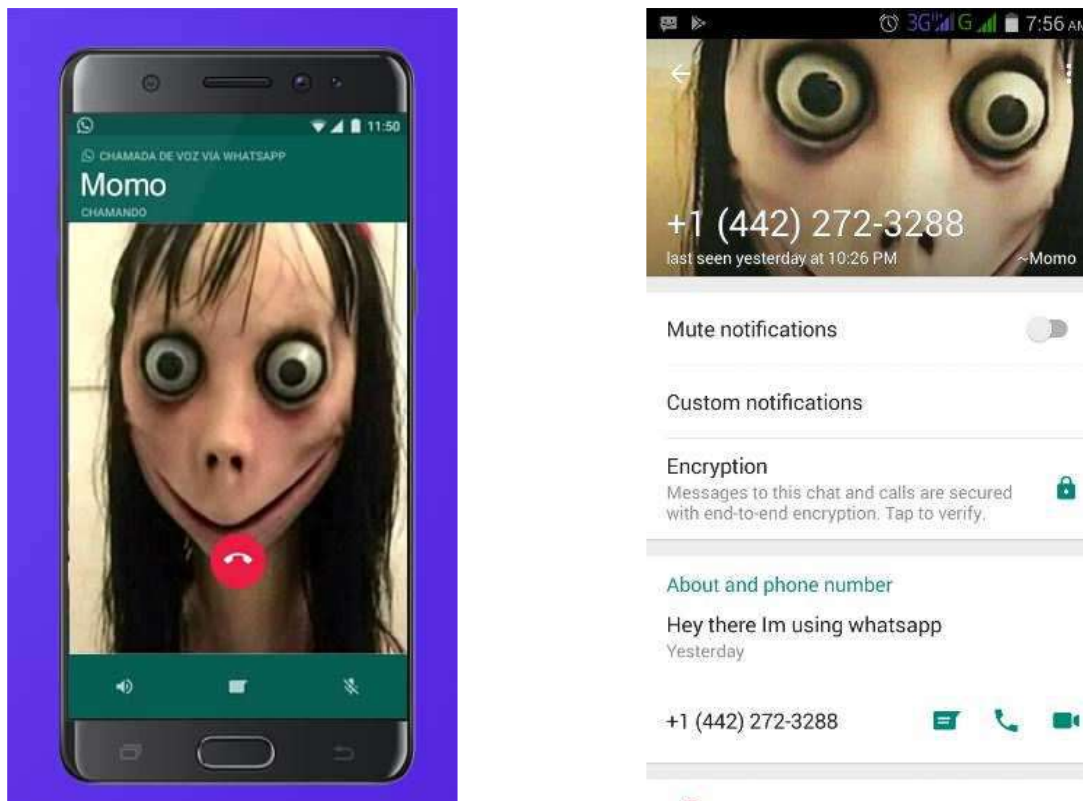


Figure 1: Mo Mo Person details

The above Figure 1. Shows that the details of Mo Mo and the number represents as other country details

Frightfully, points of interest of the Momo WhatsApp episode reverberate reports of the Blue Whale Challenge that circulated around the web in 2016, which has been bantered as a scam. Logical paranormal examiner, Ben Radford, set that the Blue Whale Challenge is a legend, propagated by the weight on experts to put forth official expressions on gossipy



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Driving Artificial Intelligence into IT and ITES

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Abstract

Artificial Intelligence (AI) is the field of emerging trends in economical, societal, industrial and technological area. Intelligent systems play an important role in day-to-day life and provide various decision support applications. The competition in the field compels intelligent systems playing different essential roles in real time. The demand of supply and growing customer base require automated and autonomous functional agents and the involvement of IT and ITES. This paper throws light on how AI has influenced the change in society and real time applications. This survey includes industrial information, intelligent technologies, machine learning, social networking and data analytics process. It summarizes the study of automated and autonomous functional agents and decision support systems involved in the field of IT and ITES.

Keywords : AI; Decision support systems; IT and ITES

Why AI is Needed?

Now-a-days, Artificial Intelligence (AI) techniques in IT and ITES, such as, Big Data, Social Networking, Parallel Processing, Decision Making Applications, Knowledge Engineering, etc deploy deep, wide and major applications. AI components are autonomous in nature and provide decision support applications in Industry. The machines with intelligent behaviour and thinking capacity produce different services. The agent program follows native behaviour, operational support systems, bug free environment and game playing nature.

According to the survey, the information technology used to think and act rationally with updated status with the combination of new evolution of IT and past IT technologies and produce intelligent technologies with industrial revolution [1].

Where AI is Needed?

It is important to know where IT and ITES are used

in real society with the support of AI. According to Karl Poper and Kal Jasper Theory, the revolution of IT era is classified into four levels a) Industrial Revolution; b) IT in Industry; c) IT in Commercial and d) Intelligent Technology. In this survey, the technology growth rationally with the help IT and services also needed. Now, the SMAC (Social, Mobile, Analytics and Cloud) environment can not do anything without internet and the intelligent machines are needed in all the operations[2]. According to Roger Thompson, the technological swift are always growing up when the intelligent system and smart system process are regularly updated.

These four technological swift and the interaction between each levels are monitored and recorded. The automated intelligent machines are used in the industry to reduce the human effort[3]. Now-a-days, the concepts of cloud computing and IoT applications are developed and used in variety of social environment applications[4].

The intelligent machine is also called decision



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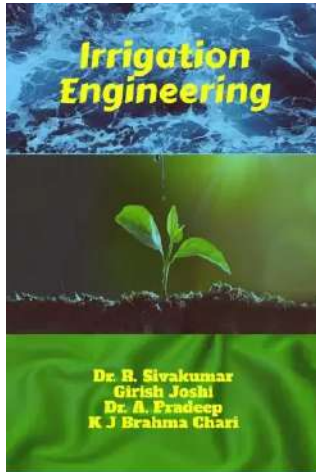
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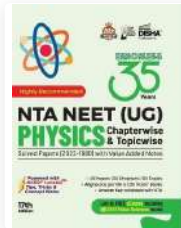
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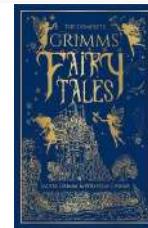
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Design and Implementation of a Novel Fifteen Level Multilevel DC-AC Inverter

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ABSTRACT: A novel multilevel DC-AC inverter is proposed multilevel generates fifteen-level ac output voltage with the appropriate gate signals design. Also, the low-pass filter is used to reduce the Total Harmonic Distortion (THD) of the sinusoidal output voltage. The switching losses and the voltage stress of power devices can be reduced in the proposed multilevel inverter. The dc operating principles of the proposed inverter and the voltage balancing method of the multilevel inverter is controlled with Pulse-Width Modulation (PWM). The dc-ac converter design and implemented in MATLAB simulation. Finally to verify the proposed topology the desired result, also discussion on current source inverter is done in this paper. This paper contains theoretical analysis and simulation result of this novel multilevel inverter.

Keywords: DC-AC Inverter, Digital Signal Processor (DSP), Maximum Power Point Tracking (MPPT), Multi Level Inverter(MLI), Sinusoidal Pulse Modulation(SPWM).

I. INTRODUCTION

Nowadays Multi Level Inverter (MLI) plays a vital role in the field of power electronics and being widely used in many industrial and commercial applications. Moreover the advantages like high quality power output, low switching losses, low Electro-Magnetic Interference (EMI) and high output voltage made multilevel inverter as a powerful solution in converter topology. Generally multilevel inverter configuration is classified into (1) Diode Clamped Multilevel Converter refer shown below [3],[4],[5] (2) Flying Capacitor Multilevel Converter (FCMC) refer shown below[3],[3] Cascaded Multilevel Converter (CMC) refer shown below [7],[6],[8]. The operation of all these three configurations were compared and analysed in terms of reliability, feasibility and efficiency. The system reliability is not directly relative to the number of components used. Among the above said configuration CMC requires individual voltage source for each H-Bridge module for obtaining synthesised ac output whereas FCMC and DCMC requires more number of capacitors and diodes respectively for their operation and

these multilevel inverter also requires complex PWM control refer shown below [11]-[5].

A result of high-technology development, the demand and the quality of electric power are higher than before. Although an Insulated Gate Bipolar Transistor (IGBT) has features of high power rating and high voltage stress, it cannot operate at high frequency. And the design of IGBT gate driver is complicated. A MOSFET is the appropriate component to operate at high frequency, but power rating is not as good as IGBT. To solve the problem, many different topologies of multilevel use low rating component at high-power application. Because of the advancement of semiconductor, refer shown below [1]-[2] the specification of power device and power conversion technique is promoted. One of the power converters which can transform dc-ac is called inverter. Inverter is the inverter medium which transmits power to other electrical equipment such as uninterruptible power supply, servo motor, air-conditioning system, and smart grid composed of renewable energy. To satisfy different demands and characteristic of loads, the output frequency and voltage have to change with different load. The purpose of the multilevel topology is to reduce the voltage rating of the power switch. Therefore, it usually is used at high-power application. By combining output voltages in multilevel form, it has advantages of low dv/dt, low input current distortion, and lower switching frequency.

II. GENERALISED H-BRIDGE TOPOLOGY

Multi Level Inverter Topology

The proposed novel topology used the seven level inverter. An input voltage divider is composed of three series capacitors C1, C2, and C3. The divided voltage is transmitted to H-bridge by four MOSFETs, and four diodes. The voltage is sent to output terminal by H-bridge which is formed by four MOSFETs. The proposed multilevel inverter generates seven-level fig. 2.1 shows below ac output voltage with the appropriate gate signals design. Refer shown below [9]-[10].

A Multiple Target Tracking Method with Optical Flow and Multi Hypothesis Kalman Filter

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Abstract— In recent days, Multiple target tracking (MTT) is an active and challenging problem in the field of computer vision, motion-based recognition, automated surveillance, traffic monitoring, augmented reality, object based video compression etc. Especially, the particular objects are tracking in an environment of multiple objects. However, it is difficult to track a particular object because many problems are occurred in an environment of multiple objects such as merging and splitting. Videos are a collection of sequential images with a constant time interval. So video can provide more information about our object when scenarios are changing with respect to time. This paper proposes an efficient moving object detection technique based on optical flow method and multiple hypothesis kalman filter to reduce the tracking of non target objects in the video. Morphological method is used for further processing to remove noise and to preserve the shape of moving object. The proposed algorithm tracks the targets in outdoor and indoor scenes well.

Keywords—Moving object, Frames, Object detection, Intensity, Centroid.

I. INTRODUCTION

Detection of moving objects in video images is one of the most important and fundamental technologies to develop the real world computer vision systems, such as video monitoring system, intelligent-highway system, intrusion surveillance, etc. Traditionally, the most important task of monitoring safety is based on human visual observation, which is a hard work for watchmen. Therefore, the automatic detection of moving objects is required in the monitoring system that can help a human operator, even if it cannot completely replace the human's presence. To facilitate a monitoring system, efficient algorithms for detecting moving objects in video images need to be used. The usual method for detecting moving objects is simple background subtraction that is to subtract current image from background image. However, there exist gradual

illumination changes, sudden changes in illumination and other scene parameters alter the appearance of the background. Simple background subtraction is susceptible to these changes. And when the brightness difference between moving objects and the background is small, it cannot detect the difference. In order to resolve these problems, some algorithms such as blob analysis technique and the technique based on optical flows have been proposed. In our method Moving objects are detected from the difference of two consecutive frames. This approach uses the motion to distinguish moving objects from the background. So it is more efficient than the previous approaches. Furthermore, the algorithm is robust to the changes of lighting condition and camera noise method and algorithm. Section II describes the system overview. Section III, IV, V and VI describes the Video sources, Preprocessing stage, Object detection and Feature extraction. Section VII describes how the objects are tracked and its application. Finally, Section VIII presents experimental results and section IX describes the conclusion.

II. METHODOLOGY

The proposed algorithm which depicted in figure 1 consists of three stages: preprocess video frames, detect moving objects, and track detected objects. In first stage, video frames are preprocessed, and in second stage moving objects are detected from the background scene based on background subtraction method. In tracking stage our aim is to simultaneously track all moving objects from frame to frame. To do this, the tracker determines when an object enters visual field of view, computes the correspondence matching between objects in previous frame and objects currently being tracked and estimates the position of each object to trace its trajectory during sequence.

A Single-Phase Buck-Boost Matrix Converter for Single Phase without Commutation Problem for Asynchronous Motor

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Abstract: This project presents novel single-phase Pulse Width Modulation (PWM) ac-ac converters that can solve the commutation problem in single-phase direct PWM ac-ac converters without sensing the input voltage polarity. Conventional matrix converter requires six switches for buck and boost conversion. By using a basic switching cell structure and coupled inductors, the proposed ac-ac converters can be short and open-circuited without damaging the switching devices with less number of switches. By replacing the conventional phase-leg of the PWM ac-ac converters with the switching cell structure and the coupled inductor, three novel buck, boost, and buck-boost type PWM ac-ac converters are developed. Our work also describes the PWM strategies to control the speed of single phase asynchronous motor. Matlab Simulink model used to evaluate performance of single phase motors for speed control.

Keywords: Buck-Boost Operation, Commutation Problem, Single Phase Matrix Converter, PWM ac-ac Converter, asynchronous motor.

INTRODUCTION

FOR AC-AC power conversion, the conventional approach is to use a diode or PWM rectifier followed by a PWM voltage-source inverter with a DC link. Other approaches include phase-controlled ac-ac converters employing thyristors, matrix converters, and so on. The output voltage and frequency can be varied with these structures. However, for applications where only voltage regulation is required, direct PWM ac-ac converters are a more practical choice in terms of cost and size. Fig.1.1 shows the basic single-phase direct PWM ac-ac converters or ac-ac choppers

The ac-ac circuits shown in Fig.1.1 have a common commutation problem. For example, for the buck-type converter shown in Fig.1(a), the switches S2 and S3 are both turned ON and OFF simultaneously, and they are complementary to the switches S1 and S4 in an ideal case.

However, due to the different time delays and limited switching speed of the switching devices, there inherently exists a short dead-time or an overlap-time between switches. During the dead-time, there is no current path for the output filter inductor (L_o), so the switches may be damaged by excessive voltage. Similarly, the switches may be damaged by excessive current when there is an overlap-time between switches S1 and S2 (or S3 and S4) because the input voltage will be short-circuited. The MC can also provide variable output voltage and frequency with directly connected input power supply to load without intermediate dc-link capacitor. Therefore, direct best alternative to conventional indirect ac-ac converters with dc-link.

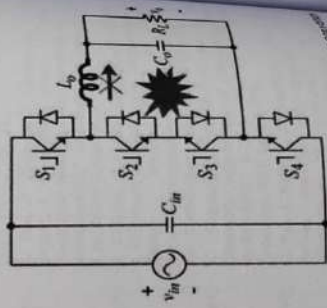


Fig.1.1 basic single-phase direct PWM ac-ac converter with commutation problem

Owing to their attractive features and high efficiency in industrial applications, the MCs have become an important part in power electronics with various developments in modeling and control, topological structure, and applications. However, most of the conventional MCs suffer from the commutation problem by sensing the voltage

Three Phase Grid Connected Transformer Less MOSFET Inverter for Photovoltaic System

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ABSTRACT: The bipolar sinusoidal pulse width modulation (SPWM) full-bridge transformer less MOSFET (PI) inverter can achieve high efficiency by using latest super-junction metal oxide semiconductor (SiC) diodes. However, the MOSFETs are full effect transistor (MOSFET) together with silicon carbide (SiC) diodes. In this paper, a family of new transformer less PV inverter topology for single-phase grid-tied operation is proposed using super-junction MOSFETs and SiC diodes as no reverse recovery issues are required for the main power switches for unity power operation. In addition, dead time is not necessary for main power switches at both the high frequency commutation and the grid zero crossing instant, results low current distortion at output. The dc voltage balancing method of the multilevel inverter is combined with Sinusoidal Pulse-Width Modulation (SPWM). This paper contains theoretical analysis and simulation result of this novel multi level inverter. Finally, a low prototype is built and tested to verify the theoretical analysis. The experimental results show 98.5% maximum efficiency and 98.32% European efficiency. Furthermore, to show the effectiveness, the proposed topology is compared with the other transformer less topologies.

Keywords: DC-AC Inverter, Digital Signal Processor (DSP), Maximum Power Point Tracking (MPPT), Multi Level Inverter (MLI), Sinusoidal Pulse Modulation (SPWM)

1. INTRODUCTION

Recently transformer less inverter has been found a one of the excellent solution for grid-tied PV application because of its higher conversion efficiency, lower cost, smaller size, and light weight[1]. Due to the loss of galvanic isolation between the PV module and the grid, a direct

path is formed to flow leakage current, which generally depends on the non-negligible parasitic capacitance between the PV module and the ground[2], and the amplitude of fluctuating CM voltage.

Another important concern of transformer less inverter is the efficiency that can be improved by optimal design. These two issues (efficiency and leakage current) are the major force in pushing progressive development of transformer less grid-tied PV inverter[3]. Voltage sag is defined by the IEEE 1159 as the decrease in the RMS voltage level to 10%-90% of nominal, at the power frequency for duration of half to one minute.

Voltage swell is defined by IEEE 1159 as the increase in the RMS voltage level to 110%-180% of nominal, at the power frequency for duration of half cycles to one minute. Voltage fluctuations, often in the form of voltage sags/swells, can cause severe process disruptions and result in substantial economic loss. So, cost effective solutions which can help such sensitive loads ride through momentary power supply disturbances have attracted much research attention [4]. In order to reduce the leakage current, a lot of in-depth researches have been conducted in the literature, where a new freewheeling path has been introduced to decouple the PV module from the grid during freewheeling period. However, due to poor reverse recovery of MOSFETs slow body-diode, it is limited to use in transformer less inverter[5]. In the MOSFET based transformer less topologies for grid-tied PV application will be reviewed and discussed based on their circuit structure, efficiency and CM voltage clamping capability. Some studies have been implemented to simplify the circuit and improve the balance speed by multistage equalization [6]-[7]. Some zero voltage and zero current switching techniques are also used to reduce the loss of the equalization circuit [8].

A fluctuating CM voltage could also be observed because the freewheeling path potential is not clamped at the mid-

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