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Appendix-II

(2019 - 2020)

To Develop a Classification Model for Health Insurance Sector

Dr. Rajeev Srivastava, UPES, Dehradun, email:rsrivastava@ddn.upes.ac.in

Dr. Atul Agarwal, Professor , Sushant School of Business , Ansal University, Gurugram

Abstract-Health insurance is used to cover expensive medical cost of the treatment. Many different types of health insurance policies are available in market to cover different types of medical treatment. These insurance policies are available for some specific disease or for generic treatment, hospitalization and other costs related to medical. This paper is trying to predict whether a particular policyholder will be taking an insurance claim or not under certain health conditions.

Keywords-Health Insurance, Classification, J48, Machine Learning, Insurance Claim

I. INTRODUCTION

Insurance can be defined as a contract between company and customer represented in terms of policy, according to which group or individual receives financial support or reimbursement from insurance company.The company pools clients' risks to make payments more affordable for the insured.This paper is trying to predict whether a particular policyholder will be taking an insurance claim or not under certain health conditions. According to this data, we will have attributes like age, gender, body mass index, children, smoker, region and the charges for building our model. We will also take into considerations the factors involved in this model majorly and also run our model through different datasets according to the time frame and then build a conclusion through the decision tree using Weka Machine learning software.

II. LITERATURE REVIEW

There are basically three main grounds for health insurance. First, one can not predict illness. Second, its very difficult to plan the cost of hospitalization. Third, the proportion of people require hospitalization during illness is less as compare to number of people take policy therefore permits of risk-pooling(Krishnan 1996).

Claim management heavily dependent on human resources has a fundamental problem dealing with appropriate claim

Measuring Innovation: Challenges and Best Practices

Dr. Naveen Nandal, Dr. Aarushi Kataria, Dr. Meenakshi Dhingra,
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Abstract

Innovation is very important in current scenario. There is a requirement to calculate the innovation in order to handle it effectively and efficiently. However, calculation of innovation has turned out to be exigent. To survive in current competitive environment every organization needs to do innovation in their product and service. Based on review of literature, organisations policies, expert's knowledge and data collection findings, this paper gives a bigger picture of challenges and best practices in measuring innovation. After looking at key challenges, the use of an innovation control panel is suggested. The control panel should include a set of measurements in each of the three groups of inputs, process and outputs of innovation. Metrics for each of the groups are detailed in the later chapters.

Keyword: *Innovation, Modern development, Best practices of Innovation, mhealth*

INTRODUCTION

The business surroundings have become increasingly active and cut-throat. Modern developments and trends in globalization and technology are the main factors contributing to these predetermined changes. In such a changing environment, only those businesses will succeed that can cope up with day-to-day changes quickly. A base for such competency is the capability to innovate. Innovation as a term is not only related to products and process only, but is also related to marketing and organization. Schumpeter (1934) described different types of innovation: new products, new methods of production, new sources of supply, the exploitation of new markets, and new ways to organize business. Drucker (1985) defined innovation as the process of equipping in new, improved capabilities or increased utility. Innovation is closely related to organizational learning. Thompson (Thompson VA, 1965) defines innovation as the generation, acceptance, and implementation of new ideas, processes, products, or services. According to Zaltman et al. (Zaltman G, Duncan R, Holbek J., 1973) and (Rogers., 1983, 1995), it is an idea, practice, or material artifact perceived as new by the relevant unit of adoption. Amabile et al. (Amabile TM, Conti R, Coon H, Lazenby J, Herron M., 1996) define innovation as the successful implementation of creative ideas within an organization (Hurley RF, Hult GTM, J., 1998). The innovation process involves the acquisition, dissemina- tion, and use of new knowledge (Damanpour F., 1991; Johnson JD, Meyer ME, Berkowitz JM, Ethington CT, Miller VD, 1997; Moorman C, Miner AS, 1998; Verona G., 1999). There seems to be wide agreement that learning climate and firm innovation are highly correlated, and many authors have called for an examination of how they are linked (Hurley RF, Hult GTM., 1998; Damanpour F., 1991; Goes JB, Park SH, 1997; Sinkula JM, Baker WE, Noordewier TA, 1997). Innovativeness is one of the primary instruments of firms' strategic movement to increase the existing market share, to enter new markets, to gain reputation in customers' perception and to create cut-throat and healthy competition. In the past decades, the essence of innovation is largely superior and it has become an important supplier to the long-term survival of the businesses, since marginal value of old products and services are reducing as it becomes outdated with the fast changing modern techniques, technologies and tuff world-level competition. This process has

BSCQUAL: A Measuring Instrument of Service Quality for the B-Schools

Dr. Naveen Nandal and Nisha Nandal

Abstract--- *The purpose of this study was to develop and validate BSCQUAL, a new measurement scale of service quality specifically designed for B-School. SERVPREF, SERVQUAL and HEdPERF are the most developed scale in the literature to measure service quality in higher education. A 27 item questionnaire on service quality in B-school was developed and tested for reliability and validity using both exploratory and confirmatory factor analyses. 800 questionnaires were collected out of which only 600 were usable. 300 questionnaires were used for exploratory factor analysis and 300 were used for confirmatory factor analysis SPSS 19 and AMOS 20 were used and exploratory and confirmatory factor analyses were applied. The recommended goodness-of-fit indices of the model were found to be within tolerable ranges, suggesting that the model provides a close fit to the data. The study identified six factors namely Physical evidence, Reliability, Development, Responsiveness, Competence and Delivery as the key dimensions of service quality. Existing literature on services quality has been used in this paper to find the student's perception and to develops an instrument that provides insights into measuring service quality for B-School.*

Keywords--- *Physical Evidence, Reliability, Development, Responsiveness, Competence.*

I. INTRODUCTION

Education is a significant institution given the shift to a knowledge economy. Scholars Ansary, Jayashree and Malarvizhi (2014) report that the service sector is the fastest-growing sector in the world, and plenty of the countries are moving from producing to services. Higher education is a "pure service as it possesses all the unique characteristics of a service". More recently, Gruber et al. (2010) found that higher education is having following characteristics of service that is perishable, heterogeneous and intangible. It is very difficult to standardize higher education. As service experience vary from one situation to the another, it makes service difficult to standardize. As it is difficult to store higher education it also satisfies the perishability criterion. However, there are several ways through which we can overcome this, for instance, the emergence of and video technology and e-learning (Cuthbert, 1996a) during the last fifteen years. Through the assistance technological and innovation advances, service sectors have overcome the perishability characteristic. Higher education is in recognized as a fastest growing service industry and, as such, is placing greater emphasis on meeting the needs and expectations of its participating customers, that is, the students. As per the literature it can be said that service quality in the education industry is considerably undeveloped. Historically, many efforts have been made on commercial services (Sultan and Wong, 2010). Oldfield and Baron, 2000 explained that previously institutions that operates in the higher education sector are not considered as "profit-making organizations," but nowadays are making so much efforts to gain a competitive advantage. But due to this, universities should not forget themselves as a "profit-making organization" that is operating in aggressive marketplace (Oldfield and Baron, 2000).

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SATYAM COMPUTER SCAM-PRE AND POST ANALYSIS- A CASE STUDY

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ABSTRACT--Scandals are regularly a "glimpse of something larger". These speak to the approvable " disastrous disappointments. Satyam Computers seemed to be at one time the diadem gem associated to India's Industry Technology Organization, however were taken to the lower part because of the originators after 2008 because of money related wrongdoing. An endeavor is built right now being watched at the uppermost to the lower part Satyam up and down. Their embarrassment/extortion has put an unavoidable issuing marking over the whole corporating administration framework belongs to Indian region. The trick brought to the light the main of corporating administration in molding the conventions identified with the working of review councils and obligations of board individuals. Embarrassments have demonstrated that —there is a critical requirement for good direct dependent on solid corporate administration, morals and bookkeeping and reviewing benchmarks. After takeover by Tech Mahindra in April 2009, the firm was at first worked as independent element Mahindra Satyam. In 2012, Mahindra Satyam was converged with Tech Mahindra. About the turnaround at Satyam Computer, Tech Mahindra cases to have conveyed around eight-overlap come back to little speculators who had contributed with the organization at the hour of takeover. In this way, major money related announcing fakes should be read for exercises scholarly' and methodologies to-follow' to diminish the episodes of such fakes later on. The expanding pace of salaried wrongdoings —demands firm punishments, commendable disciplines, and powerful requirement of law with the correct soul.

Keywords-- Corporate accounting scandal, Satyam Computer India, corporate governance, Accounting and auditing standards.

I.   INTRODUCTION

The corporate sector in India is governed by the Companies Act of 1956 which aims to ensure adequate protection of the interests of creditors and shareholders and regulates the issue, transfer and allotment of securities; the Securities Contracts (Regulation) Act of 1956 which covers all aspects of securities trading and regulates the operations of the stock market; the Securities and Exchange Board of India (SEBI) Act of 1992 which protects the interests of shareholders and promotes and regulates the securities markets; and the Sick Industrial Companies (Special Provisions) Act (SICA) of 1985 which deals with the financial reorganization (including bankruptcy procedures) of distressed companies. India's corporate sector consists of private limited and public limited companies. The Indian corporate sector has seen substantial and significant changes since 1993 when the phrase corporate governance came to prominence. Since then, a series of legal and regulatory reforms have transformed the corporate governance framework and improved the level of accountability and

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Review Article

AN EXPLORATORY RESEARCH IN PRODUCT INNOVATION IN AUTOMOBILE SECTOR

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Abstract
The purpose of this research is to analyze the determinants of product innovation. This study focused on the statistical technique using the factor analysis on constructing the new factors that lead to product innovation in Automobile Sector. The researcher used quota sampling dividing into the Delhi/ NCR amongst four automobile companies i.e. the four of them are market leaders as per their market share and in each of these areas purposive sampling is used for the purpose of survey. It is a sampling techniques in which the sample is obtained by selecting convenient population units. For the purpose of the study, primary data was collected with the help of a well-drafted Questionnaire given to Top and middle executives in the automobile organizations (N=423). Cronbach Alpha was used to evaluate the internal consistency of the scale items. The methodologies used were descriptive statistics, factor analysis and non-parametric technique using the Kruskal-Wallis test. The results showed seven new factors were successfully constructed using factor analysis and assigned as the factors affecting the learning styles; which are 1) Intelligence Generation, 2) Intelligence Dissemination 3) Quality 4) Flexibility, 5) Dependability/ Delivery,6) Marketing support of the product 7) Technology Selection

Keywords— Factor analysis, Automobile sector, Innovation

INTRODUCTION
The meaning of product innovation is the launching of new products and unique services with major improvements in their salient features and applications. This consists of considerable enhancements in technological disclaimers, tools and resources, integrated programs, customer easiness and supplementary purposeful features. The success of any organization can be traced or linked with successful products and this based on their capability to search the wants of clients and to quickly make goods that fulfil these demands. Therefore, product development can be described as the life blood of any business organization Brown and Eisenhardt (1995), Balbutin et al. (2000), Efcharis et al. (2008), Chux Gervse Iwe (2010). According to the Oslo Manual (OECD,2005, p.46) a minimum condition for an innovation is that the product, process or technique innovation must be novel *to the organization*, which includes both novelty that the company is foremost to increase and those that are accepted from other organizations. Following from this disagreement, an innovation is considered to be *new-fangled to the market* if the firm is the primary to introduce the modernization on its marketplace (OECD, 2005, p.58). Christensen (2006) examines the term *sustaining innovation* in opposition to *disruptive innovation*. A nourishing innovation does not have a troublemaking effect on old market place but could include both existing improvements (i.e. improving a product in an old market place in demanding styles) and radical alterations (i.e. developing a new marketplace by understanding the upcoming opportunity in a new style). Generally, sustaining innovations improve buyer worth by providing a higher amount of manufactured goods routine. A disorderly innovation, conversely, brings a completely diverse worth proposition to the marketplace that has not survived before.

During modern decades increasing ecological concerns have become a well-built encouragement to creative thinking. Ecological system will exert huge weight on production industries, which will augment in the upcoming time, enabling a more surviving globe for coming generation. The automobile industry is one of several industries causing ecological pollution where cars have a important impact on all stages of the life cycle; manufacturing, use, reusing and dumping (Orsato and Wells, 2007). Automakers have also shown an escalating awareness of the ecological impact of their products as environmental rules and market demands for ecologically less disparaging cars have augmented. The centre on reducing CO2 has become a well-built driver in the growth of not only less ecologically vicious cars, such as Electric Vehicles (EV) and Hybrid Electric Vehicles (HEV), but also of mass-reduction way-outs. The heaviness of the car is one necessary factor that has a consequence on CO2 emissions for both expected cars and for EVs and HEVs. An uneven estimate recommends that a mass reduction of 100 kg marks in decreased fuel flaming up of 5% (Swedish Association of Green Motorists, n.d.).The basic fact is that a 10% heavy decrease results in a 4e6% diminish in fuel utilization representing some of the prospective in focusing on frivolous concepts in the automotive business. Even though automakers realize and largely master sensible difficulties with choices to the all-steel body, and despite various phases of aluminium-intensive cases vehicles or low- quantity, high-performance sports cars, the conventional industry has even now majorly engaged the all-steel parts. A General opinion in the innovation theory is that big, developed organizations in the automobile business generally face problems in enabling major innovations (Henderson and Clark, 1990; Utterback, 1996) and in spite focus the growth and application of marginal innovations (Dougherty and Hardy, 1996). The information regarding how to handle scratch and drastic innovations is very few because the methods, tools and processes to handle such innovations are vague (Pavitt, 2005) resultant in marginal enhancement which is considered to bring low threat and instant return (Dougherty and Hardy, 1996; Leifer et al., 2002., McDermott and O'Connor, 2002). At the core of innovation action is the capacity to, for instance, making and sharing of ideas to join old innovations into novel way

Women Social Entrepreneurs: A growing trend in Indian Economy

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Abstract

As compared to the earlier times where women work is limited to their household activities only, now women have been recognized as playing a critical role in the society, acting as a change agent & innovators. but still because of their lower status & mentality of the society, their entrepreneurial ability & talent is not properly tapped. If tapped properly by providing equal opportunities & status, the country will be on another level. Social entrepreneurship is a great combination of Social Service and Entrepreneurship. Social Entrepreneurs have more responsibility towards well-being of Society rather than earning profits. The main aim of this paper is to find out the status of Women social Entrepreneur in India, challenges faced by women social entrepreneurs and strategic measures recommended

Introduction

Entrepreneur is an individual (or team) who identifies the opportunity, gather the necessary resources, creates and is ultimately responsible for the performance of Organization. Entrepreneur and Entrepreneurship are two sides of the same coin; while entrepreneur is an individual who creates and establishes a business, entrepreneurship is the process adopted by the entrepreneur to do so. Entrepreneurs have a high need of achievement. The characteristics of an entrepreneur especially (high need for achievement and innovative) differentiates him from a normal businessman.

A social entrepreneur is a person who applies his novel ideas on the problems of Society and has the capacity to solve society-based problems. These are the people who are interested in the upliftment of certain sections of the society or certain people who have been ignored or who are not able to develop by themselves. These are the individuals who are willing to take on the risk and wants to create positive changes in society through their initiatives. Their aim for starting a business venture is for the welfare of the society, not profit making. They work for the welfare of society by producing environmentally friendly products or by serving undeserved community. While profit earning is the main aim for most of the entrepreneurs yet it does not stop the ordinary entrepreneurs to have positive impact on society. Social Entrepreneurs have more responsibility towards well-being of Society rather than earning profits. So, social entrepreneurs are just like "regular" entrepreneurs, but their business goals are to have a positive impact on social, cultural, or environmental issues while also supporting themselves with a profitable company.

Women entrepreneurship refers to business or Organization started by woman or a group of women. Role of Women in society has changed due to growth in education, urbanization, industrialization and awareness of domestic values. Women Social entrepreneurs who belong from urban, middle-class backgrounds felt an additional burden to prove their educational and professional qualifications. They needed to prove their families and society that they had not become social entrepreneurs as a "last resort," because they could not get a higher-paying or prestigious position.

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Green Marketing in India

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Abstract:
As we all know that pollution level is increasing day by day and there is a need to take some action against it. Now a day's consumer are also aware about the Environment condition & want to buy those products which are less harmful to the society and also want to connect with the Organization using Green Marketing. This results in a trend of green marketing used by the Companies as one of the strategies implemented to gain profit and protect the environment. Green marketing is used for environment friendly products that are considered to be green like low power consuming electrical appliances, organic foods, lead free paints, recyclable paper, and phosphate free detergents. This paper helps us in imparting knowledge about the Effects of Green Marketing on Consumer behaviour & Satisfaction and Environmental safety, its impact in Textile and Automobile industry.

INTRODUCTION: -

Green Marketing is the marketing of those products & services which are environmentally friendly. 'In involves making changes in product, changes in the process of production, changing packaging and modifying advertising'. Greenhouse Gas, Emission of Pollutants & Global Warming is the central problem which everyone is facing today, the awareness level of same is increasing and leads the marketers to brand and rebrands their products' towards their global problem. Green Marketing affects all aspects of Economy, it not just protect the environment but also create new market and job opportunities. "The American Marketing Association (AMA) defines Green Marketing as the marketing of products that are presumed to be environmentally safe".

The American Marketing Association (AMA) definition

(Retailing definition) Green marketing means marketing of those products that are presumed to be environmentally safe.
(Social Marketing definition) The marketing development of those products which are designed to minimize negative effects on the environment or to improve its quality.
(Environmental definition) The efforts taken by the Organizations to produce, package, promote and reclaim products in a manner that is responsive to ecological concerns.

Evolution of Green Marketing

Green marketing is the term that was first discussed in a seminar on "Ecological Marketing" organized by American Marketing Association (AMA) in 1975 and took its place in marketing terminology.

According to Peattie (2001), the evolution of green marketing has three phases. First Phase was termed as "**Ecological**" Green Marketing. In this period all the marketing activities were concerned to help environmental problems and to provide remedies to those problems.

Second Phase was "**Environmental**" Green Marketing. The focus was shifted to clean technology that involves the designing of innovative products that take care of pollution and waste issues.

Third phase was "**Sustainable**" Green Marketing. It came into existence in late 1990 and early 2000. It was concerned with developing the products

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CORONAVIRUS AND ITS IMPACT ON STOCK MARKET

Dr. Naveen Nandal et al.

Abstract

The aim of this research is to examine the coronavirus and its impact on share market. The global stock

market has sunk after the pandemic outbreak in the whole world. we have seen a negative impact of

coronavirus globally. The Dow and the FTSE have seen their biggest one day declines since 1987. If we

talk about domestic market Nifty, Bank Nifty and Sensex they all have fallen sharply in last 2 months which

proves that markets are very much concerned about coronavirus disease. All global economy whether its

Russia, Brazil and France almost fell around 30% due to the virus. Nifty fell from 12000 to 7550 and Sensex

fell from 41000 to 25000 in last 3 months. It has been observed that there is about 20% to 50% downfall in

almost every stock price.

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IS LOYALTY PROGRAM AS A MARKETING TOOL EFFECTIVE?

N. Nandal, N. Nandal, Ritika Malik • Published 2020 • Business

Loyalty programs are an ubiquitous instrument of customer relationship management. Complexity of modern business requires managers to strive for innovative strategies to acquire and retain customers in any product market field. As acquiring new customers is getting costlier day by day, business organizations have offered loyalty programmes to retain & reward existing customers and maintain relationships. One of the best ways to keep customers coming back for more is by establishing an effective loyalty or rewards program. Loyal customers, it is said, are worth striving for. They spread positive word-of mouth, reduce defection rates, and amplify the purchase frequency, to name just a few examples. But what can be done to induce that loyalty? Can loyalty schemes help us to do so? In this paper, we try to determine whether loyalty cards issued by stores have an impact on customer loyalty. The aim of this research is to enhance our understanding of loyalty program effectiveness. Collapse

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LOYALTY PROGRAMS: DO COMPANIES REALLY MAKE CONSUMERS LOYAL?

S. Dimitrieska   T. Efremova   Business, Economics · Entrepreneurship · 2021

In the markets of different products and services, the interests of both, companies and consumers collide. Companies that offer products and services expect a return on investment and higher profits.... Expand

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Evolution of loyalty programs offered to customers and investors

Danuta Dziawgo   Business, Economics · Financial Internet Quarterly · 2023

Abstract The subject of this study is loyalty programs. The aim of the article is to draw attention to loyalty in the current economy. The purpose of the article is to examine the evolution of... Expand

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Review on India's Baby Care Market

N. Nandal   Dr. Ritika Malik   Dr. Naveen Nandal   Business · 2020

Now a days market is more shopper oriented and all activities of business rotate around the Customers in order to satisfy them by fulfilling their needs via effective service. The quality products of... Expand

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The Impact of Usefullness of Brands' Social Networking Pages –A Structural Equation Modelling Approach

Swati Gupta[1], Dr. Atul Kumar Agarwal[2] & Dr. Ajay Kumar Chauhan[3]

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Abstract: Internet has increasingly become a popular platform for shopping amongst internet users in India due to the growth of internet popularity. The aim of this research is to study the impact of usefulness of brand pages through social media networking sites. Social media gives the platform to business to raise their brand awareness, increase sales, generate brand loyalty and to overall better communicate with customers, helping build long lasting relationships.

Market Scenario has been changed due to social media, consumers are responding to the same. Social media platforms like Facebook ,Twitter, Instagram, youtube, LinkedIn and Google plus are comprised of brand pages of certain brand which keeps the consumer updated . This paper examines the use of apparel brand pages on social media influences the consumer to purchase online. Even it focuses on how these companies are using social media to effectively reach their target audiences and how their audiences are responding. This research also examines the relationship that brands are creating with their consumer base through social media and why people choose to create such a relationship with a particular brand. The objective of this study is to determine if people are interacting with retail brands through social media and if they are, why and how much.

A self – administered and structured online survey was conducted targeting self- employed , students , private sector employee (employees working in the private sector) and public sector employee . A sample of 530 questionnaires were distributed to the research population and 479 filled responses were received . Confirmatory factor analysis has been conducted to test the reliability of instruments being used for data collection. Further, model has been proposed for measuring usefulness of SNS sites through Structural Equation Modeling.

Key words – Social networking sites , Usefulness, Structural equation modeling

INTRODUCTION

Social networking websites (SNS_s) have emerged as the requisite . In year 1997 they started their journey by launching sixdegrees.com which attracted millions of users at that time .Social media describe by Kaplan and Haenlein (2010) as "a group of Internet based applications that build on the ideological and technological foundations of Web 2.0, and that allow the creation and exchange of user-generated content." The term Social media refers to the collection of technologies that capture communication, content, their friends and their social networks. Example of social media include social networking sites like Facebook and Twitter, blogging technologies like typepad and word press, crowd sourcing products like Wikipedia, photo and video sharing like Flickr and Youtube and others .Through internet abundance of services are been offered by social media . This makes it complicated for companies to know which ones to use and how to use them. The types of social media include: social networks (Facebook, Myspace, and LinkedIn), micro-blogs (Twitter) reviews and ratings (Yelp, Amazon, and Trip Advisor), video (YouTube) and more. Social media enables firms to engage consumers in a timely and direct manner at relatively low cost and higher levels of efficiency than with more traditional communication

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REVIEW ON INDIA'S BABY CARE MARKET

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ABSTRACT

Now a days market is more shopper oriented and all activities of business rotate around the Customers in order to satisfy them by fulfilling their needs via effective service. The quality products of baby are found to be expensive and companies are always looking to develop the most cutting edge products. The main concern of the parents is to have best products for their child in order to keep safe and sound. Parents just not but the product easily by believing on the advertisement, they do research on the Internet by viewing product websites, consumer reports, blogs etc. and then make a decision, but the one which suits him the best. Increasing level of income, availability of better products and rising awareness have meaningfully altered the child care products industry landscape. In field of baby care product, India is found to be most preferred destination for marketers and manufacturers.

Key words: Baby Market, Health & Safety, Product, Quality, Child Care.

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http://www.iaeme.com/IJM/issues.asp?JType=IJM&VType=11&IType=5

1. INTRODUCTION

The segment which is rising at a fast pace in India is Baby care market. The usage & amount of child care products has almost double in India in last few years. The factors which are nurturing the progress of the segment are vast population of India, increasing birth rate & literacy rate, enhanced purchasing power and urbanisation of the rural population. Parents now a day no more get appealed by the fancy advertisement, they make their purchasing decisions after investigating on Internet, taking reference from friends and reading customer reviews etc. New parents are also tremendously concerned about their child's safety. It is very

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Original Research Article: Open Access

Relationship between Religiosity, Self-Esteem and Locus of Control: A Comparative Study

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ABSTRACT

The purpose of this study is to determine tile relationship between religiosity, self-esteem and locus of control. A total of 100 students (50 male and 50 female) aged 18-23 enrolled at various North Indian universities. The instruments used in the study were the centrality of religiosity scale (CRS), Rosenberg's self-esteem scale (SES) and Levenson's multidimensional locus of control scale. Results of the study show a significant positive correlation among all the three variables; religiosity, self-esteem and locus of control. There was found no significant difference in the levels of religiosity and locus of control among male and female students however male students reported significant higher scores on the levels self-esteem. Further suggestions and recommendations are discussed.

Keywords: Religiosity, Self-esteem, Locus of control

INTRODUCTION

The terms religiousness/religiosity is utilized conversely however frequently characterized as a person's conviction, dedication, and love towards holiness. Religiosity is a term used to describe the extent to which religion influences societies and intersects with other areas of public life. It defines the role that religion plays in society, including the extent of people's beliefs, commitments, and levels of engagement with their particular religion. In the most complete utilization of religiosity, it can have every one of the components of religion, yet this idea of religiosity can be utilized in a restricted sense to signify extraordinary sense and over commitment to religious customs and tradition. This resolute type of religiosity in its heart is frequently seen as a negative side of the religious experience, it can be composed by an over contribution in religious practices which are permitted to be past the social standards of one's acknowledgment. Individuals who are progressively religious will in general connect less in such hazard practices as substance misuse or hazardous sexual practices. It ought to be noticed that a few examinations have discovered no connection among religiosity and saw pressure.

Despite the fact that these researchers found no relationship, the examples they contemplated were multi-denominational. Since the exploration writing shows that pressure methods for dealing with stress may change by ethnicity and sexual orientation, it is additionally vital to decide if the connections among religiosity and stress veer off by these

factors. Countless examinations have proposed that there are noteworthy contrasts in adapting methodologies between sexes.

Religious concepts are not evolved biological adaptations but rather by-products of more general cognitive structures that are adaptations. Adaptationist versions concentrate on the benefits provided by religion, such as increased social cohesion and the individual benefits that stem from it, such as better physical [1]. Positive religious adapting has been related with great well-being results, and negative religious adapting to the inverse. Negative religious adapting incorporates aloof trusting that God will control the circumstance, reclassifying the stressor as a discipline from God or as a demonstration of the fallen angel and scrutinizing God's affection. Religious practices can keep up psychological wellness. They help to adapt to nervousness, fears, dissatisfaction, outrage, anomie, inadequacy sentiments, sorrow and detachment.

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India & Neighbours

Harnessing the Potential of India-Kyrgyzstan Relations: Problems and Prospects

Dr. Anjali Sehrawat

the light of India's policy of growing ties with dia's extended neighborhood, Central Asia gion (CAR) has become an important expanse India's foreign policy. Kyrgyzstan is an portant neighbor for India since the days of cient Silk Route. After attaining independence 1991 from the USSR, Kyrgyzstan became the ily Central Asian state to adopt democracy as a rm of government. It was also addressed as an sla___ of Democracy' for its pluralist polity in e sea of authoritarian and despotic regimes of AR. India was among the first countries to tablish diplomatic relations with independent rgyzstan. Against this backdrop, this paper eks to analyze the diplomatic relations of India ith Kyrgyzstan. The collaboration in socio-olitical and economic areas would be examined, nalyzing the past and present. The potential areas f cooperation will be discussed providing round for further collaboration between these wo countries.

Historical Connections

India has maintained close relations with Central Asia and its contact with Kyrgyzstan can be traced back o the ancient times. A group of nomadic people, sakas, inhabiting Issyk-Kul Lake in Kyrgyzstan expanded to establish Indo-Scythian kingdoms in Northwestern India in 2nd century BC. The Silk Route that connected the West and the East for trade also became a medium for cultural exchange among the regions falling on the route from 3rd century BC until 15th century. Kyrgyzstan being part of Silk Route shared political, social and economic and cultural routes with India. There was an exchange of goods, philosophies and religion along civilizations in this network. Buddhism also spread from India to Central Asian region including Kyrgyzstan as seen in the archaeological finds in the Chu Valley and Semireche region. Also, Buddhist sites in Tokmak and Bishkek were connected to Buddhist sites in Kashmir. The founder and first dynast of Mughal Empire in India,

Babur, a descendant of Emperor Timur (Tamerlane) also came from Fergana Valley. He seized the Sultanate of Delhi in 1526 AD establishing the Mughal Dynasty in most of northern India. A Chagatai Turkic, Babur, is also considered a hero in Kyrgyzstan and Uzbekistan and his poems are resonated as popular folk songs.

After interludes of invasions and self-rule, Kyrgyzstan became part of the Russian Empire in 1876 and subsequently USSR after the Russian Revolution. The country became independent in August 1991 and India became one of the first countries to establish diplomatic contacts with Kyrgyzstan in 1992. The contacts between India and Kyrgyzstan, rejuvenated only in the 21st century, as Kyrgyzstan appeared very low in India's priority list in the first decade of its independence.

Revival of Region's Strategic Importance

Central Asia has always been the center of Great Powers' interest because of its geographical extent, strategic location, ethnic diversity and conflict potential for the same reason. Russian and British Empire played their 'Great Game', throughout the nineteenth century, where Russia had the supremacy. The disintegration of the USSR, the emergence of Central Asian Regions and discovery of huge quantity of energy resources in the region has led to a new 'Great Game' between competing regional and extra regional players.

Central Asia featured truncated in India's priority list in the first decade of their independence. Prime Minister Atal Bihari Vajpayee underlined the need of building a new Silk Route of friendship and collaboration between India and Central Asian region in 2002. But India woke up much later, as it feared losing the region to China. The changing geopolitical and geo-economic realities in the region changed India's outlook. In order to reconnect India with CAR in general and Kyrgyzstan in particular, Indian

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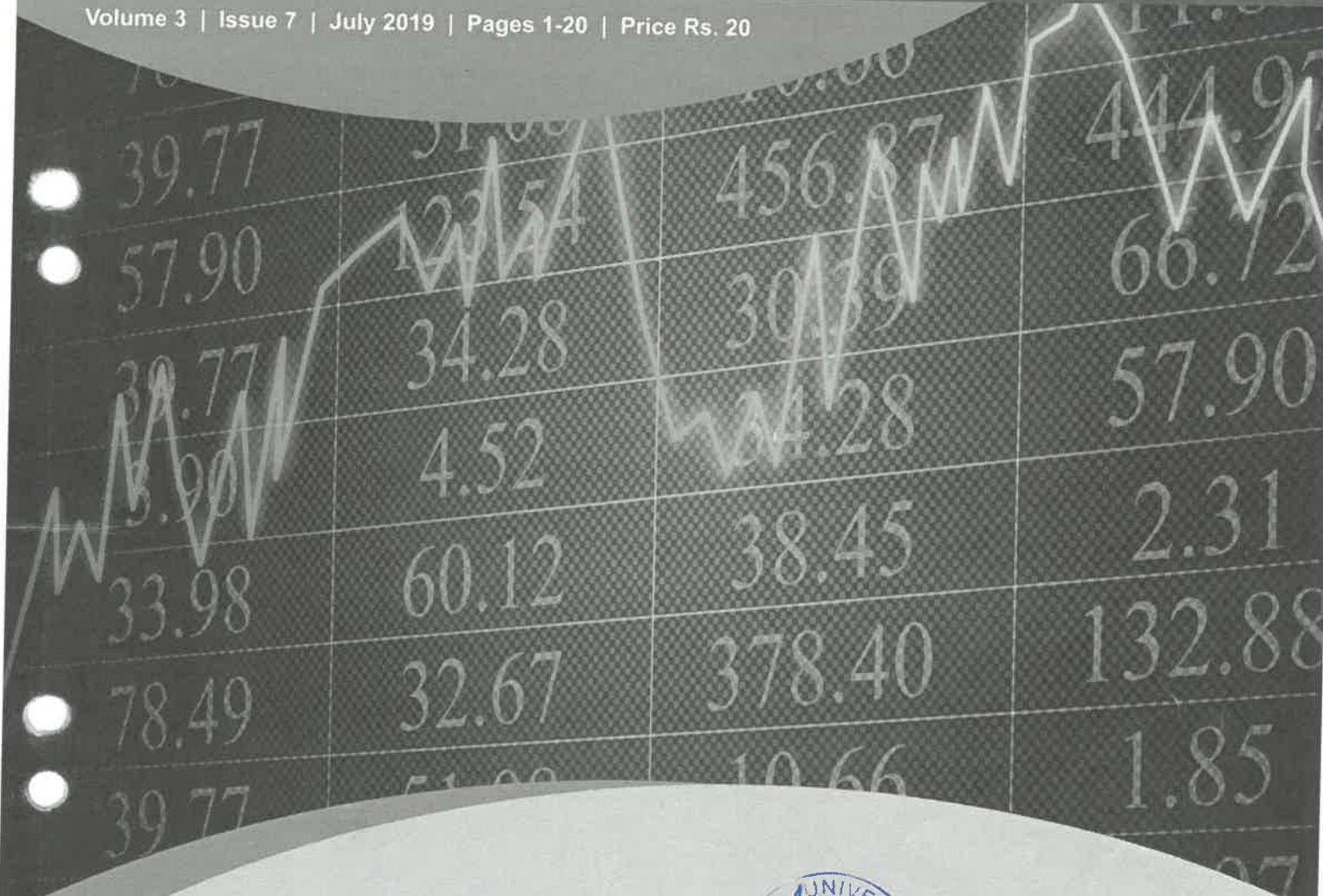
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CONTENTS

Takeover Provisions under the Companies Act with respect to unlisted companies : An Analysis

Takeover can be formally defined as acquisition of certain block of equity capital or controlling interest in a company, which enables the acquirer to exercise control over the affairs of the company. The researches on takeovers has always focussed on the Takeover Code in relation to the listed companies only. The unlisted companies have mostly been left out of it. The focus of the article is on the analysing the related provisions of the SEBI (Substantial Acquisition of Shares and Takeovers) Regulations, 2011 and the law governing takeover with respect to unlisted companies.

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Introduction

It was in 19th century around where, the first wave of mergers and acquisitions led to the emergence of concept of takeovers for the first time in US, UK as well as India. This sudden wave led to a lot of changes in the corporate world and made it significant to have fortified laws and regulations governing the processes of mergers, acquisitions and takeovers. In this pretext, the focus of the present paper is on analysing the concept of takeovers as well as analysis of the laws governing takeovers specially with respect to unlisted companies.

It has to be noted that the laws and regulations governing takeovers in India are different for listed and unlisted companies.

Incorporation of clauses 40A and 40B of the erstwhile Listing Agreement (clauses) was the first attempt to regulate takeovers. The erstwhile Companies Act, 1956 (1956 Act), which was in existence at that point of time, did not have any substantive provisions with respect to takeovers. Sections 391-395 of the erstwhile 1956 Act only made reference of takeovers without there being any elaborate provisions regulating takeovers. Securities and Exchange Board of India (SEBI) was established in the year 1992 and it notified a formal code SEBI (Substantial Acquisition of Shares and Takeovers) Regulations, 1994 (Takeover Code) which was subsequently amended in 1997 and 2011, it is recently amended on September 11, 2018. This formal code only dealt with takeover of listed companies in India. Thus, until the enactment of the Companies Act, 2013 (the Act) there was not any regulatory framework for takeovers with respect to unlisted companies.

Takeover – Definition and Concept

As mentioned above, the laws and regulations are different for unlisted and listed companies so, it becomes important to distinguish between the two. 'Listed company' is defined in clause (52) of section 2 of the Companies Act, 2013 ('2013 Act') as "*a company which has any of its securities listed on any recognised stock exchange.*" Unlisted company is neither defined in the 2013 Act nor any distinction is made under the Takeover Code of SEBI. But in can be safe to define an unlisted company as a company which is not covered in the above stated definition under the 2013 Act *i.e.* it is a company which does not have its securities listed on any stock exchange.

It also becomes important to understand what exactly is meant by a takeover. The term "Takeover" as such

INDIAS VIBGYOR MAN: SELECTED WRITINGS AND SPEECHES OF L.M. SINGHVI, (2018). Edited by Abhishek Manu Singhvi and Lokendra Malik, Oxford University Press, New Delhi. Pp. 335, Price: Rs. 795/-.

THE BOOK titled 'India's Vibgyor Man: Selected Writings and Speeches of L.M. Singhvi' is a compilation containing unpublished articles and speeches of L.M. Singhvi on diverse topics pertaining to law, literature, diplomacy, governance and much more. This Book is a tribute to L.M. Singhvi and it has been edited by Abhishek Manu Singhvi and Lokendra Malik. L.M. Singhvi passed away in 2007 leaving behind a long trail of achievements in diverse fields. The book reverberates that L.M. Singhvi was a multifaceted personality – author, jurist, statesman, philosopher, and a social reformer or a change maker to be more appropriate and the most celebrated Indian public figure of his times. Singhvi started his career as a lawyer from Jodhpur District Court and went on to become the Advocate General of Rajasthan, after which he moved to the Supreme Court, making a splendid contribution in diverse fields. He became India's High Commissioner in England in 1991 and held office until 1997. He was the longest serving high commissioner of India in England after Krishna Menon. He also gave his perspective in this piece on Indian professionals working in the United Kingdom.[1] He contended that United Kingdom gives many moving errands to Indian experts and had a vision of the superior future for Indian professionals working in the United Kingdom keeping in view the verifiable historical association between the two nations.

The book brings out the magnanimous personality of Singhvi through his biographical sketch and through his speeches giving a genuine and legitimate record of his ideologies. The book has been divided into two parts, where Part 1 covers the biographical account of L.M. Singhvi covering many phases of his life journey, his contributions and achievements in various fields which are interminable. Part 2 of the book has three sections A, B and C which reflect upon his academic writings. Section A contains writings on issues pertaining to public governance and administration. Section B contains issues addressed by him related to diplomacy and international affairs and section C covers his ideology and contribution on areas such as education, literature, health, religion, arts and society. The book through his speeches gives a detailed insight of his detailed contribution as a scholar of international eminence. He played a

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[1] Part 2, Section B at 114-120.

significant role in establishing Institute of Constitutional and Parliamentary Studies in Delhi. His speeches clearly reflect that he was a man with a vision and expressed his views freely on many socio-legal issues of contemporary significance. His observations on Constitutionalism of India as a lawyer, parliamentarian, and as a diplomat, have played a noteworthy role in strengthening the spirit of rule of law and constitutionalism in the country. He was a great defender of freedom of press and expression, particularly freedom of press, which is the fourth pillar of our democracy as to him, the press was highly instrumental in promoting intellectual growth of human beings who ultimately constitute the nation. He defended secularism on all platforms, be it court of law or the Parliament. Singhvi at the Convocation of University of Delhi on August 6, 1995 addressed the gathering and expressed that the Indian colleges need to address the essential issue of what they are relied upon to accomplish and what they are really delivering. His address at the convocation is mentioned in Part C of the book under educational reforms in India.[2] He also highlighted his concern that quality has turned out to be progressively peripheral and that isn't just a direct result of the asset crunch and he further expressed that he felt Indian colleges in today's time are neither focused nor innovative. They appear to have lost their direction since they have lost their imperativeness of the general ethos of every single instructive framework.

The book also additionally illuminates Singhvi's dynamic personality and being a follower of Gandhian jurisprudence in its true letter and spirit, he has always been a supporter of non-violence. He has made some of the finest recommendations in his discourses and works. He opined that the political parties should disclose their choice for the office of the Prime Minister before forming any post poll alliance.[3] This would help people take a well-informed and well-educated choice for a superior government. Singhvi was the first person in the country to coin the term 'Lokpal' during the Prime Ministership of Pandit Jawaharlal Nehru in 1963. The book also explicates the importance of education for Singhvi and he believed that living and learning are in a sense co-extensive. The universities and colleges are significant on the ground that knowledge is significant and it is information of life and learning forever, which together continue developments, guarantee their survival and encourage their advancement and success. Information edifies, liberates, engages, and changes. He requested in one of his speeches that the understudies use their insight for the country building process. Being a supporter of the idea of

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[2] Section C, Part 2 at 252.
[3] Section A, Part 2 at 58-64.

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Uniform Civil Code in the country, he accentuated on the need of its auspicious implementation keeping in view its provision and prominence in the constitutional text. He has been bestowed with so many prestigious awards and has been associated with many government committees and international bodies including the United Nations. He assumed a significant job in fortifying the Indian diaspora framework.

The book opens Singhvi's perspective on public governance and decentralization wherein he has valued the role of Panchayati Raj Institutions to fortify the democratic fabric of the country.[4] He has pursued Gandhiji's line of Gram Swaraj in his musings. He was an extraordinary supporter of decentralization of powers who stressed on concentrating on nation building through institution building. Rajiv Gandhi when he was the Prime Minister was receptive towards his suggestion. This reflects that was Singhvi was open and extraordinarily ahead of the curve. The same is reflected in the writings and speeches of Singhvi finding a mention in Section A of Part 2 of the book.

The editors have dealt with Singhvi's perceptions on the civil services and good governance keeping in view the upsides and downsides of the bureaucratic system predominant in the nation. Singhvi appreciates the role of civil services in nation building but also had shed light on how corruption can be exterminated from the system to have corruption free governance. He also emphasized on the need to improve the quality of democratic governance system in the country. Singhvi was an incredible backer of good administration and decentralization. He accepted that little states are vehicles of good administration in the nation.

Singhvi's perspective on Kashmir problem accounted in this book in Section B of Part 2 of the Book,[5] keeping in view the worldwide difficulties to the Kashmir issue reflected that the alleged interest for free Kashmir and the supposed third alternative is generally and lawfully with no premise, and politically it would be a wellspring of interminable interest, unending distress, and determined destabilization of either nation, and the abuse of Jammu and Kashmir as a pawn on the worldwide chessboard. Singhvi asserted that the individuals who represent the third alternative based on rule of self-determination do not seem to comprehend the idea which is

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[4] Section A, Part 2 at 37-44.
[5] Section B, Part 2 at 141-149.

bound in global law to decolonization and can't be utilized as an instrument for breaking down multicultural sovereign and democratic states.

This book imparts knowledge on lot of important issues discussed and deliberated upon by Singhvi and others. This collection or speeches and writings in a book makes a good read particularly for the administrators and the future age to gain from the remarkably astounding observations made by a man with such wide knowledge to comprehend things from a more extensive and propelled viewpoint. It is admirable how such complex issues involving law, human rights, international relations, diplomacy, and governance have been put with such simplicity and ease by Singhvi. The title of 'Vibgyor Man' is so apt for Singhvi going through his writings and speeches, Singhvi truly is the Vibgyor man, who wrote and deliberated on variety of issues relevant in contemporary socio-political and socio-legal discourse. The only thing this book misses is the connection between the speeches and writings, which could have been done by connecting all the speeches and writings while drawing his biographical sketch simultaneously.

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Experiential Narrative as a Tool for Space Making

🖼 Prof Amrita Madan

2019, Veranda: Journal of Sushant School of Art and Architecture, Volume 1, Issue 1, 2019

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SAA-2

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Integrating Built Heritage in Development Planning: Small and medium towns of Gurgaon District

Parul G Munjal

Abstract: Rapid growth of cities is a reality addressed in the formulation of Sustainable Development Goals (SDGs) as a part of the United Nations Development Programme (UNDP). Goal 11 proposes 'improving urban planning and management through participatory and inclusive ways' [1]. While this is an obvious ideal, the challenge lies in operationalizing it. In the many layers of a typical urban context in India, one is that of built heritage. One that is marginalized in the process of development planning, particularly in areas such as the Gurgaon District of Haryana that has seen unprecedented urban growth and transformation over the last few decades [2]. The study approaches sustainable development from the lens of built heritage and socio-cultural processes revolving around it in the given context.

The research focus is on built heritage of small and medium towns in the Gurgaon District and its linkages with the physical, socio-political and developmental context. The towns of Sohna, Farrukhnagar and Garhi Harsaru in the District have been taken up for study. The three towns are spread across three different Development Plans prepared for Sohna, Farrukhanagar and Gurgaon-Manesar Urban Complex. A critique of the developmental planning approach highlights it's disconnect with built heritage [3]. Mapping of the socio-political context and various on-ground processes of maintaining and managing of built heritage by the local community point towards connections with development that helps sustain the built heritage. There are community linkages, associations and values grounded in the context that play a significant role in the process.

The study reveals that built heritage has an integral relationship with its physical and ecological context, and represents, along with being impacted by, social and political events in the past and present. Hence, historical as well as contemporary positions find a place in the narrative. The community led processes of present day are layered with meanings, understanding which can pave the way for a participatory and inclusive approach towards development, rather than forcing a one size fits all solution.

Keywords: built heritage, community linkages, participatory approach, inclusive approach, sustainable development, planning.

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I. INTRODUCTION

There are diverse processes of urban development planning at play in India, ranging across scales and scenarios. While formal planning tools are generated to govern this in the form of master plans or development plans by town and country panning departments of each state, many decisions on ground are guided by informal political and economic forces. Segments such as heritage are addressed in the master plans of cities like Delhi, as these include a section on conservation of built heritage and conservation strategy, along with provision of heritage zones, archaeological parks and special conservation plans [4]. Development plans prepared for controlled areas identified within Gurgaon District encompassing small and medium towns represent the other end of the spectrum. These are more recent phenomena, with the first development plan for Gurgaon formulated in 1982 and those of Farrukhnagar and Sohna in 2012 and 2008 respectively [5]. Hence, alternative processes have guided development here more than formal ones. The present study maps the processes that establish linkages of heritage with the larger physical, ecological, social and political context in small and medium towns of Gurgaon District. This is intended to help establish a framework for inclusive and participatory development that is responsive to the current processes at play around built heritage, driven by local stakeholders.

The study is positioned in Sohna, Farrukhnagar and Garhi Harsaru that are small and medium towns in the Gurgaon District, with further focus on four sites; Shiv Kund and Shahi Masjid in Sohna, Sitaram-Mandir Gurudwara in Farrukhnagar and Baba Bhorangi Shah Ashram in Garhi Harsaru. The District is of particular interest, as it showed the highest percentage decadal growth rate of urban population from 2001 to 2011 among the 21 districts of Haryana.[1] The four sites were chosen based on the premise that these are unprotected[2] sites with collective ownership and in use by the local community, as these present the most active participation of nongovernmental stakeholders in the process of valuing, conserving and using built heritage.

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[1] The State average percentage decadal urban growth rate is 44.25 while that of Gurgaon District is 236.53 [2]

[2] Without any legal protection from Department of Archaeology and Museums at the state level or Archaeological Survey of India at the national level

SAH-3

Article

Early Approaches to Heritage in Pre-Colonial India: Reconsidering the Eurocentric View of History of Built Heritage

February 2019

February 2019

Authors:

Sylvie Dominique

Abstract

This paper aimed at rehabilitating the pre-colonial approach to heritage in South-Asia. Though the Eurocentric view has been questioned in the field of history, the historiography of heritage conservation continues to overlook the contribution of other regions such as South Asia. By proposing a second reading of previous works related to South Asian history , I have offered to reconsider the history of patrimony in India by looking at the early approaches to heritage in the pre-colonial period. It focuses on three of these approaches: first, destruction, repairs, appropriation, abandon or reuse; second, the claim of legacy through the construction of memorials; and third, the antiquarian appeal to monuments and custodian approach that led to historical interest and repairs, both individual and collective. It contends that these early practices differed little from those found in Western Europe at the same period and may be considered in a more global view of the history of conservation of architectural heritage.

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Deconstruction and Fractalization of Urban Identity

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ABSTRACT

In this paper, we report on deconstruction of urban semantics in Ellamite city. It is significant because how the city's identity has acquired a semantic significance beyond its significance what is still to be seen. The research, by referring to the Dur Untash city at the Symbolic level, seeks to answer the question on how in urban semiotics, the city's identity has acquired a semantic significance beyond its significance. The situation of the city expresses a state that any kind of dominant discourses has lost their accreditation capacity and authority, and the audience cannot rely on any of the currents that were considered as definitive. City identity is nothing but fractal games that there is no source of authority that indicates the fixed meaning of these formulas, and it is a social contract. These contracts derive from the semiotic rules which is agreed upon in the community. In this game, we tried to impose certain meanings on the city identity using the symbolic function; to internalize meta-narrative (internalization process) and in this way, the identity and the presence of the Dur-Untash city will be recorded in time and reach an immortal realm.

Keywords: urban deconstruction; urban semantics; urban identity; urban symbolism; fractalization of urban meaning

ABSTRAK

Dekonstruksi dan Fraktalisasi Identitas Perkotaan. Makalah ini membahas tentang dekonstruksi semantik perkotaan di kota Ellamite. Ini penting karena bagaimana identitas kota telah memperoleh makna semantik di luar signifikansinya, dan apa yang masih harus dilihat. Penelitian ini, yang mengacu pada kota Dur Untash pada level simbolik, berusaha menjawab pertanyaan tentang bagaimana dalam semiotika perkotaan, identitas kota telah memperoleh makna semantik di luar signifikansinya. Situasi kota mengungkapkan bahwa wacana dominan apa pun telah kehilangan kapasitas dan otoritas akreditasi, dan penonton tidak dapat mengandalkan salah satu arus yang dianggap definitif. Identitas kota tidak lain adalah permainan fraktal yang tidak ada sumber otoritas yang menunjukkan makna tetap dari formula-formula tersebut, dan ini adalah suatu kontrak sosial. Kontrak ini bersumber dari aturan semiotik yang disepakati dalam komunitas. Dalam permainan ini, kami mencoba menekankan makna tertentu pada identitas kota dengan menggunakan fungsi simbolik; untuk menginternalisasi meta-narrative (proses internalization) dan dengan cara ini, identitas dan keberadaan kota Dur-Untash akan terekam dalam waktu dan mencapai alam abadi.

Kata kunci: dekonstruksi perkotaan; semantik perkotaan; identitas perkotaan; simbolisme perkotaan; fraktalisasi makna perkotaan

Introduction

Deconstruction shows a complex respond to a theoretical variety and very prominent philosophical movements in 20th century as the phenomenology of Husserl, de Saussure, Ferdinand, French structuralism and Lacan psychoanalysis and how the plural logic emerges from out of the relative ruin of the transcendental tradition (Cixous 1994; Hurst 2008). A constant reminder of the etymological link between 'crisis' and 'criticism'. It makes manifest the fact that any

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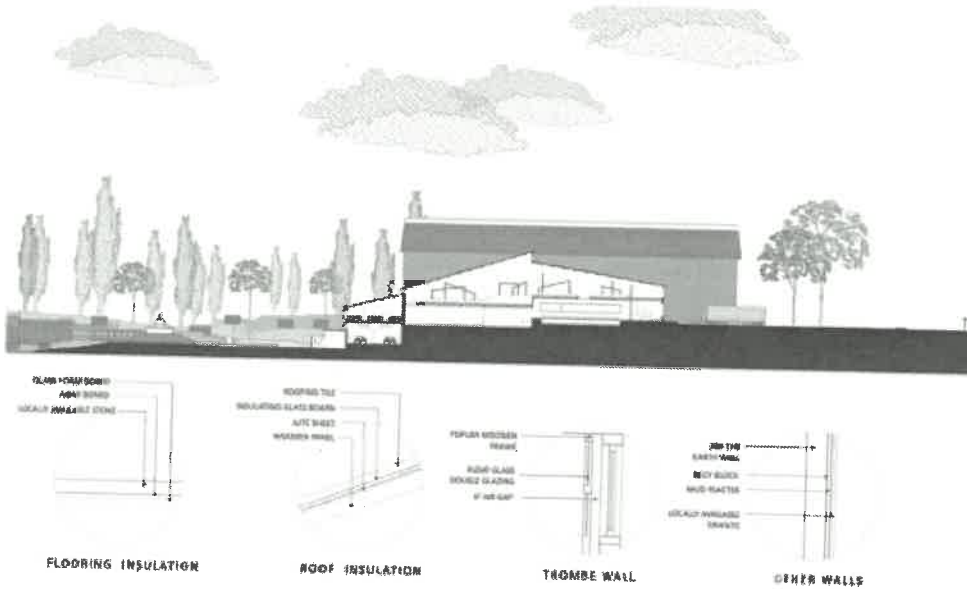
India,

as an intervention zone, provides a rich contextual fabric that has seen layered complexities over time. When setting up design iterations in such
sites, it is vital that the memory
and identity be used as keystones to help formulate context-sensitive solutions.

The term 'cultural sustainability' finds its meaning in architectural development as the maintenance of practice and beliefs. A culture's struggle has always been its ability to exist in the future—in its truest form possible, without the fear of dilution, yet with enough scope of evolution in its prescribed set of morals and beliefs. As architects in practice and academia, it is essential that a dialogue is initiated at the very beginning of a design proposal, allowing the local materials, techniques and volumetric vocabulary—a part of the culture and history of the region—to frame the basis of the built syntax. This gesture shall ensure that the expected results are equitable and sensitive. Integrating culture into development policies and building programmes essentially contributes to the effectiveness of the intervention as well as the cultural sustainability of the region.

In the realm of formal education, it is imperative that these learnings are effectively curated for students and further applied in their design proposals. Pedagogic tools need to be employed, where an understanding can be established that architecture can build resilient communities when it places the users and their cultural heritage in the centre of the design process. We need to drive the thought home that design solutions in architecture should be

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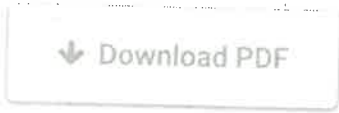
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श्रद्धांजली

The Connection Between Old And New Delhi With A Look At Master Plan 2021

Ar. Savar Suri - Email : savarsuri@gmail.com

Ar. Savar Suri, having 6+ years of experience across varied residential and commercial projects having worked in a corporate as well as at one of the most highly regarded Architectural firms in India and globally recognized among the best design firms also known for their strong emphasis on sustainability across all their projects. He has also worked previously at a high end residential architecture and Interior firm in Delhi having worked on bespoke residences and office spaces of niche clientele.

The year 2019 marks 108 years of a city that has been a crucible-a melting pot of various cultures, religions, and architecture of different cities within it-Delhi, we can count 7 of them starting from being the kingdom of the Tomars and Chahuhans in the 11th century and then undergoing various transformations under different rules and different strata of society to becoming the capital of British India in 1911 (which was formally inaugurated in 1931).

We all know that all these invasions have left an indelible mark on the architecture and the urban fabric of Delhi. From Qutub-ud-din aibak's Qutab Minar to Tughlakabad of the Tughlaqs to the Jama Masjid we can notice different building typologies, but a fundamental question exists.. Are these buildings in sync and relevant to today's times and have they evolved as the time as changed?

Delhi is a historical city, whose remnants are spread right from Mehrauli to Shahjahanabad having large number of monuments scattered all over Delhi. The built heritage of Delhi is an irreplaceable and non-renewable cultural resource. Besides being part of life for many, it has educational, recreational and major tourism potential. It enhances Delhi's environment, giving it identity and character. It encompasses culture, lifestyles, design, materials, engineering and architecture.

The Heritage Resources include symbols of successive civilizations and cities that came up over the millennia, historic buildings and complexes, historical gardens, water engineering structures and their catchments, the remains of fortified citadels, places for worship and for the deceased, historic cities and villages, unearthed heritage and their components. The surveys conducted by the DDA & INTACH identify 1208 historical monuments in Delhi of which the Archeological Survey of India has declared 170 monuments as protected. In addition to these MCD, NDMC and the State Archaeological Department have published lists of Heritage Buildings.

Delhi does indeed have a vast number of clash points of the old and new cultural fabric.

The only real connection one can have with the history is through some structures that were built in the past and make them relevant in today's times. It is very important to identify these clash points for the rich history which is associated with them, and not just consider them as a liability for the government. On the contrary, such clash points as have enormous potential to attract visitors and they are an asset to a nation in every sense of the term and also come in the list of protected sites by the Government agencies.

A building in use, with a specific function and which attracts people to it is better conserved than others. This is due to the fact that the maintenance of these in use structures are done regularly and the structure stands erect for many generations to come and visit thus enabling the association of a larger generation of people to understand the era to which the structure belongs like the Tughlakabad Fort.

The Master Plan 2021, defines a heritage zone, to be an area, which has significant concentration, linkage or continuity of complexes united historically or aesthetically by plan or physical development. The following have been identified as Heritage Zones in Delhi as indicated in zonal plan and heritage complexes have been proposed in -

* Walled City of Delhi, Shahjahanabad
* Lutyens Bungalow zone
* Nizamuddin and Humayun's Tomb Complex
* Mehrauli Area
* Vijay Mandal
* Chirag Delhi

Furthermore, the Master Plan allows for addition to be made to this list based on studies by concerned agencies. Also, the Master Plan proposes for 3 Archaelogical Parks, 2 of which at Mehrauli and Tughlakabad, which it defines as "an area distinguishable by heritage resource and land related to such resources, which has potential to become an interpretive and educational resource for the public in addition to the value as a tourist attraction."

Also, under the Urban Design chapter of the Master Plan, it is said that "The Walled City of Shahjahanabad has certain urban form characteristics. The Jama Masjid is a dominating feature located on hilltop and is different, both in form and scale from the other developments of the city. The boulevard of Chandni

Two-Layer Sapphire Rectangular Dielectric Resonator Antenna for Rugged Communications

Garima Bakshi[1, *], Arti Vaish[1], and Rajveer Singh Yaduvanshi[2]

Abstract—This paper presents a stacked rectangular dielectric resonator antenna design. In this structure, two sapphires having the same dielectric constant and different dimensions piled over each other have been used for designing the proposed antenna. The designed antenna exhibits two frequency bands from 7.41 GHz to 8.21 GHz and 9.11 GHz to 12.65 GHz and impedance matching of 50 ohms. The proposed antenna design is a fine choice for subterranean and rugged communication, in addition, owing to sapphires unique features viz. durability, endurance, and aversion to physical change. The antenna structure is aperture coupled. Due to the advantage of aperture coupled feed mechanism such as good isolation between antennas and feed networks it has been employed. The antenna prototype has been fabricated, measured, and tested using Vector Network Analyzer and Anechoic Chamber to validate the proposed antenna design. The simulation results obtained indicate close proximity of tested result.

1. INTRODUCTION

Since its inception, wireless technology has undergone many stages of development. There has been revolutionary growth in the world of wireless communications systems. Antennas form the most integral part of any wireless communication systems. In order to keep pace with fast changing requirements of the wireless communication market, fast and efficient antennas are in great demand. Besides, it is desired that antennas should be of that type which can be scaled up in frequency. There are two types of antennas which have been able to match up these needs namely microstrip antenna and dielectric resonator antenna. Initially, microstrip patch antennas were best suited, but from last few decades dielectric resonator antennas have totally replaced them [1–3], since dielectric resonator antennas (DRAs) have an edge over microstrip antennas because of its many attributes namely ease of fabrication, flexibility infeed mechanism, low profile, high radiation efficiency, and wide frequency range to name a few. Moreover, DRA is a 3-D structure whereas microstrip antenna is a 2-D structure. In addition, DRAs are well suited for low-loss applications for the reason that there is no conductor loss in them.

In 1939, Richtmyer proved that dielectric resonator antenna radiates energy [4]. However, the investigation done by the author was theoretical. Thus practical applications did not occur till the 1960s. It was Long et al. [5] who for the first time conducted a proper study and experimentally investigated properties. Long et al. also measured the radiation pattern, the input impedance for structures of many geometrical aspect ratios, and the permittivity and sizes of co-axial fed probes. Their study on the dielectric resonator antenna gave a suitable substitute over traditionally used low gain antenna elements. After carrying out an investigation of cylindrical DRA, Long and colleagues carried out research on other DRA shapes such as rectangle and hemisphere [6–9]. Design flexibility in terms of shape and feeding mechanisms makes DRA the first choice of antenna designers. DRA
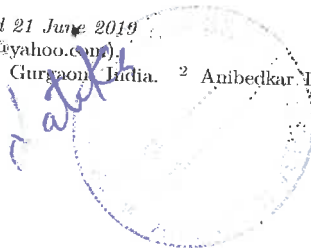
Classifying Red and Healthy Eyes using Deep Learning

Sherry Verma[1], Latika Singh[2], Monica Chaudhry[3]
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Abstract—Eye is one of the most vital organs of human body. Despite being small in size, humans cannot see the life around them without it. Human eye is protected by a thin covering termed as conjunctiva which protects the eye from dust particles. It plays the role of lubricant in the eye which prevents any sort of friction in opening and closing of eye. Broadly there are two kinds of conjunctiva: bulbar and palpebral. The membrane covering the inner portion of eyelids is termed as palpebral conjunctiva and the one covering the outside portion of the eye is called as bulbar conjunctiva (white portion of eye).Due to the dilation of blood vessels the white portion of the eye also termed as sclera becomes red in color. This condition is also termed as hyperemia. The study of this development is vital in diagnosis of various pathologies. It could be result of some trauma, injury or other eye related diseases which needs to be identified for timely treatment. Enormous amount of studies have been done to study the structure and functionality of human eye. This paper highlights the work done so far for measuring the level of redness in the eye using various methodologies ranging from statistical ways to machine learning techniques and proposes a methodology using Matlab and Convolutional neural network to automate this evaluation process.

Keywords—Bulbar conjunctiva; hyperemia; convolutional neural network

I. INTRODUCTION

Conjunctival Hyperemia results due to the engorgement of blood vessel in the sclera of the eye. Due to this there is accumulation of blood in the vessels which makes them thicker in size in terms of width. The severe the injury, the more engorgement it results into. As the circumference of the blood vessels gets increased, it results into redness of the affected area. Depending upon how serious the trauma is the level of redness varies. It could range from slight red to severe red. Scholars have worked out various ways of measuring the degree of redness. An effective methodology to measure this is important for diagnosis of various other eye related pathologies. The most important factors that help clinicians to classify hyperemia are degree of redness, hue of the colour and location of the vasodilation [1]. The accurate interpretation of bulbar redness can identify various pathologies like morning eye congestion, bacterial conjunctivitis, dry eye [2], trauma due to prolonged use of contact lenses, iritis and other severe infections [1][3]. It is also a well know side effect of glaucoma treatment [4].Because of these symptoms, patients suffering from the glaucoma drugs often discontinue the treatment [5].Timely and correct diagnosis of these conditions can further reduce any damage to the eye and also help in treatment plan. From last two decades researchers have been working to scale the redness level of the eye in the best possible ways. Most of the

work is focussed on subjective analysis of bulbar conjunctivitis using methodologies that involved verbal classifications of redness and/or through pictorial representation. Later the concept of image processing was used extensively to remove the subjective dependency in scaling the redness and various automated approach were presented. This study presents the journey of scaling the hyperemia from manual approach to automated approach by various scholars. The objective of this paper is to analyse the work done so far in the clinical assessment of redness. The paper is organised into various sections: Section II briefly highlights the subjective assessment of hyperemia. In Section III detail research in objectively scaling the hyperemia is mentioned. Section IV highlights potential new way of assessing the redness. Results and conclusion are presented in Sections V and VI.

II. SUBJECTIVE ASSESSMENT OF HYPEREMIA

Ocular surface assessment is a routine procedure and one of the common methods to do it is subjective observation and description [6]. Assessment of bulbar redness is quite difficult owing to the contrast of repeat assessment among different clinicians over a period of time [7] [8] [9]. Also various internal and external factors make the subjective analysis much unreliable and results varies from observer to observer [10]. Clinical grading can be performed using at least two general approaches. One that involves the brightness of the eye and other that is based on the various features of the vessels of the concerned area. [8] Paul highlighted the features like vessel tortuosity, number of vessels in the area of study and the diameter of the blood vessels to measure bulbar redness. The clinical assessment of bulbar conjunctivitis is subjective in nature [11] and is poorly understood. It is primarily based on grading scales. The challenge in grading is that the grades themselves are poorly described and moreover due to the varying learning abilities, it is not clear how clinicians grade the redness [10] [12]. The early scale developed was photography based McMonnies/Chapman-Davies scale, which graded conjunctival hyperemia on six levels. [13] It was quite useful for clinical application but was restricted to contact lens wearers. The scale established that hyperemia in soft lens wearer is relatively high as compared to hard lens wearer. Further CCLRU standards (cornea and contact lens research unit), which was earlier termed as IER scale (the Institute for Eye Research scale) was developed [14]. This scale highlighted the clinical performance of lenses with respect to short and prolonged use [15] [16]. It graded the bulbar redness on a 5-point photographic scale where 1 stands for very slight, 2 means slight, 3 signifies moderate and 4 represents the condition as severe. The results of this scale lacked in homogeneity, either in terms of different

Comparisons of Speech Parameterisation Techniques for Classification of Intellectual Disability Using Machine Learning

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ABSTRACT

Classification of intellectually disabled children through manual assessment of speech at an early age is inconsistent, subjective, time-consuming and prone to error. This study attempts to classify the children with intellectual disabilities using two speech feature extraction techniques: Linear Predictive Coding (LPC) based cepstral parameters, and Mel-frequency cepstral coefficients (MFCC). Four different classification models: k-nearest neighbour (k-NN), support vector machine (SVM), linear discriminant analysis (LDA) and radial basis function neural network (RBFNN) are employed for classification purposes. 48 speech samples of each group are taken for analysis, from subjects with a similar age and socio-economic background. The effect of the different frame length with the number of filterbanks in the MFCC and different frame length with the order in the LPC is also examined for better accuracy. The experimental outcomes show that the projected technique can be used to help speech pathologists in estimating intellectual disability at early ages.

KEYWORDS

Classification, Intellectual Disability (ID), Linear Predictive Coding, Mel-Frequency Cepstral Coefficients, Typically Developed (TD)

1. INTRODUCTION

In social communication, speech performs an important role to express feelings, emotions and thoughts. Communication impairments affect the process of initial cognitive development which continues to further stages. Neurodevelopment disorders, specifically, Intellectual Disability, Autism, Stuttering and Down Syndrome directly affect the speech and language development. Intellectually disabled children are highly prone to developing some speech, vocal or language disability, which has adverse effect on language development.

According to (World Health Organization, 1980), children with intellectual disability usually have impairments in language and speech which further classifies in use and comprehension of the language, deficits of the linguistic function, learning disabilities and impairments of communication. ID children also face difficulties in speech production, voice functions and speech content. The disorder

SET-3

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1. INTRODUCTION

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SET-2

Evaluation of Convolutional Neural Network Model for Classifying Red and Healthy Eye

Sherry Verma, Latika Singh, Monica Chaudhry

Abstract: *Human eye is covered with mucous like thin membrane on the outer surface as well as inner surface of the eyelids. The thin membrane covering the outer surface is called as bulbar conjunctiva. Conjunctiva hyperemia refers to the redness of the conjunctiva. There are several reasons for this condition, some of which are related to pathologies like trauma, allergy, injury, prolonged use of lenses or glaucoma. Hence, it is one of the most vital parameter to diagnose these pathologies. For populous developing countries like India, ratio of ophthalmologist to citizen is highly skewed which negatively affects the public health. This gives rise to need for developing technology based solutions for initial screening of eye problems like conjunctiva hyperemia. This paper presents a framework for classifying normal versus red eyes using deep learning technique of convolution neural network (CNN). The model has shown promising results with 94% accuracy.*

Keywords : Hyperemia, Convolutional Neural Network, Bulbar Redness, Healthy Eyes.

I. INTRODUCTION

T There are many areas of human eye, which one cannot see with naked eye. One of them is a thin membrane, which covers part of the outer and inner surface of the eye. The membrane covering the sclera (white portion of the eye) is known as bulbar conjunctiva and the membrane covering the inner surface of eyelids is known as palpebral conjunctiva [1]. The primary function of this membrane is to protect the eyes from dust and various microorganisms. It acts like a lubricant, which eases the opening and closing of eyes. The inflammation of conjunctiva, also known as conjunctivitis results in the redness of this area. This occurs when there is an engorgement in blood vessels, which results into accumulation of blood there by giving red coloration in this area. A thorough study of this condition, also popularly referred to as hyperemia, erythema or conjunctival injection, can lead to the examination of various pathologies like complications resulting from contact lenses, allergies, dry eye [2] [3] etc. In addition, it helps in measuring their rapid growth and reaction to certain types of treatments. Timely diagnosis of this condition is very essential for proper treatment otherwise, it could lead to loss of vision.

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The ophthalmologist to population ratio in developing nations is highly skewed. In urban India, this ratio is 1:25000 whereas in rural India it is as low as 1:219000 [4]. It is very challenging for handful of these practitioners to cater for the entire population. However, technology can provide solutions for initial screening of eye problems like conjunctiva hyperemia. Due to all these factors, there is a need of automation, which will detect bulbar hyperemia. Scholars have done work [5] [6] [7] in this regard in recent past using concepts of machine learning like classification and regression. However, these approaches are solely based on feature extraction, which needs to be defined and calculated very carefully. The present study investigates this problem by training a convolution neural network to differentiate between normal and red eye. In a study [8], subjective and objective assessment of hyperemia was being made using correlation analysis. This was an interesting work, which showed the linear association among clinical grades of redness and automated approach that focused on finding number of vessel in a smaller area. Unfortunately, this work took into consideration a very specific and small area of conjunctiva rather than the entire area. Moreover, it was very different from the actual clinical grading methodology. In another study [9] automated approach was developed to grade the redness in human eye by applying canny edge detection method for feature extraction after isolating the sclera region using segmentation. It overcame the drawback of earlier proposed method [8] by considering both the nasal and temporal area of the eye. However, the work still required ophthalmologist intervention and took into consideration very few features for analysis. In addition, the computation time was high. A similar study [10] performed image analysis using Bayesian classifier. The study took into consideration only two major features of redness and appearance of blood vessels to minimize human intervention and to remove inconsistencies related to clinical grading. Nevertheless, it still was dependent on human intervention for segmentation. In [11] digital image analysis methods like thresh holding, color extraction and edge detection were used. Further to have results that are more accurate, correlation between the digital image analysis techniques and the grading scale was performed. The results showed that out of all methods, edge detection was found to be most stable to luminance intensity; also, it correlated well with CCLRU (cornea and contact lens research unit) grades. Another study [12] presents a framework to grade bulbar conjunctival hyperemia using CCLRU. However, this work was highly dependent on optometrists reading and did not involve automated approach.

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Use of blockchain in designing smart city

Surbhi Dewan, Latika Singh ▾

Abstract

Purpose

A blockchain is a shared distributed ledger technology that stores the information of every transaction in the network. The blockchain has emerged with a huge diversity of applications not only in the economic but in the non-economical domain as well. Blockchain technology promises to provide a wide range of solutions to the problems faced during implementation of smart cities. It has the potential to build smart contracts more secure, thus eliminating the need for centralized authority.

Design/methodology/approach

This paper presents a proof-of-concept for a use case that uses an Ethereum platform to build a blockchain network to buy, sell or rent a property.

Findings

The findings of this study provide an opportunity to create novel decentralized scalable solutions to develop smart cities by enabling paperless transactions. There are enormous opportunities in this distributed ledger technology which will bring a revolutionary change in upcoming years.

Originality/value

The concept of blockchain along with smart contracts can be used as a promising technology for sharing services which is a common requirement in smart cities. All the blockchain transactions are stored in decentralized shared database. The transaction recorded in decentralized system is immutable, it cannot be altered and hence chance of forgery is negligible.

Design of Framework to Quantitatively Measure the ubiquity of an IT Solution

Anil Kumar Mishra, Yogita Gigras, Latika Singh

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Abstract: Ubiquitous computing is one of the most disruptive and emerging technology of present times with applications in many areas like manufacturing, healthcare, real estate etc. Design of standards and framework for these applications is an ongoing research area. To aid a better design, it is worthwhile to have a framework that can be used to quantitatively measure various features of IT solutions and products like ubiquity, security etc. The primary aim of having this framework is to assist in development of a solution or product that is properly engineered. This paper provides a novel framework which includes various metrics that measures various features of an IT application or product. The application of the framework is demonstrated by measuring the various features of two different versions of a smart home application developed by a company for luxury real estate project. Initially, the first version of the application is evaluated using the proposed framework which then helped in identifying the improvement areas which were enhanced in subsequent version of the solution. These results are presented to validate the proposed concepts and model.

Keywords: Framework, Ubiquitous computing, Ubiquitous application.

I. INTRODUCTION

The landscape of ubiquitous computing is rapidly increasing. According to International Data Corporation (IDC), it is expected that worldwide spending on such IT solutions is going to touch \$1.2T in 2022, attaining a CAGR of 13.6% over the 2017-2022 forecast period. With parallel growth of technologies like artificial intelligence, machine learning, 5G etc., are enabling innovation in product development in many crucial sectors like healthcare, security, energy, smart cities, environment and sustainability etc.

A ubiquitous solution consists of smart devices that are connected through a network preferably internet [1]. These smart devices are equipped with sensors, actuators and chips that gather data, perform certain operations and send/receive data over the network. The complete solution consists of various heterogeneous components like hardware, software, network protocols etc. [2]. This implies that traditional architectures, solution development methods and frameworks cannot be applied for making of such solutions. However, it is possible to extract several common characteristics as well like composition of services, embedding security, data

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integration etc. One of the most important feature to consider while developing such a solution is to consider the ubiquity (ubiquitous) level of the solution. During design and development stage, the aim is to have maximum ubiquity level within the constraints of available sensor & network technology and finances. Also during subsequent versions, the solution provider will focus in improving the ubiquity level of the solution to give better user experience.

The present study aims to provide a novel framework where new metrics are also proposed to measure the ubiquity of the solution. These are very important factors for success of any solution as the main purpose is to provide automated services to user without comprising the security and privacy.

The paper is organized as follows: in section 2, the proposed Methodology and the proposed metrics are provided, whereas in section 3 the details of the study of smart home solution are provided. The proposed methodology is applied to measure the ubiquity level of a smart home solution and the results are discussed in this section only. In section 4, conclusion and discussion is provided where it is discussed how this framework was used to enhance the quality of subsequent versions of the solution.

II. PROPOSED METHODOLOGY

As discussed in section 1, the present study aims to provide a framework for measuring the quality of a ubiquitous solution or product. Advances in technology has the potential to provide efficient, secure and user friendly solutions for various sectors like healthcare, transportation, manufacturing etc. Any evaluation framework that aims to measure the quality of an IT solutions should capture main features like adaptability, awareness about the environment etc. The proposed framework consists of metrics that try to capture these features. Ideally, the solution should be easy to use, learn and adopt. The instructions should be well documented and there should be a provision to take feedback from the user. These properties are essential to address in modern day applications like smart home, smart offices etc as the prime purpose of having these solutions is the user experience and remote availability. For any ubiquitous solution, the ubiquity can be measures using following metrics

2.1 Invisibility

The solution should be able to gather information from the surroundings in which it is installed and use this data dynamically to build and run models. In other words, it is the ability of the solution to collect the data from the environment without human intervention [4]. With advances in embedded systems, hardware technologies, invisible computing has seen tremendous growth. Focus of Internet of Everything is to make things smart and connected.

Route Deviation Algorithm with Location Ambiguity in Wireless Sensor Networks

Priyanka Chugh (Shivanka), Dinesh Rai, S. Indu

Abstract: Nowadays, the primary concern of geographic routing protocol lies in the fact of minimisation of energy dissipation during the transfer of each packet in a network. This paper proposes an energy-efficient real-time algorithm in sensor networks, i.e., Route deviation Algorithm. Route deviation algorithm combines the characteristics of both distance-based criteria and direction or angle based criteria. In this paper, we have shown a comparison amongst COMPASS algorithm, NFP, MER and Route deviation algorithm. The simulation model includes numerous parameters, namely, threshold energy, number of sensors, spread of the map, position of sensors and transmission time. The results obtained through the simulation model supports the fact that the Route deviation algorithm accomplishes the task of saving energy and adds to the life of the networks.

Index Terms: Compass, NFP, MER, lifetime of network, wireless sensor network, Route deviation, transmission range.

I. INTRODUCTION

For forthcoming generations, wireless sensor networks are a significant technology that could be utilised for numerous purposes. The significant applications of Wireless sensor networks include military applications, obtrusion detection and environmental monitoring. A wireless sensor network consists of wireless sensor nodes which have low-puissance, are economically cheap, multifunctional, capable of sensing and computing, and can communicate wirelessly. These sensor nodes have been characterised based on restricted resources, specifically memory, energy and processing power [20]. These nodes mainly consist of data processing unit called CPU, a recollection unit for storing data, a transceiver for forwarding and receiving signals, data or packets and battery to provide energy for its functioning. Together, the nodes form a network enabling communication between these nodes. Nodes can communicate directly or via several intermediate nodes. The sending node becomes the source, which communicates with one or more nodes that act as sink. For a distant sink, a multi-hop protocol is utilised, i.e. the sink

node is off direct transmission range of the source node, the data is sent via chain of hops employing intermediate nodes. Since the resources are inhibited and the energy used is more, the routing process is cumbersome.

This work predicated on geographic routing as we commence by giving a brief exordium about identically tantamount. After that, it discusses its protocols, namely, Compass, NFP and MER. Proactive routing is a technique where topology of network discovered by broadcasting flare signal from the sink to the entire system periodically [19]. An extended incipient algorithm based route-deviation is proposed in this work. This algorithm predicts routes by identifying the node's routes with location errors taken into consideration. Here, those subsisting protocol's characteristics are analysed, which are helpful in more preponderant and energy-efficient based route establishment. Further, location errors are explored in detail to avoid energy losses. This work is organised as follows: an incipient algorithm based on route deviation with location errors is proposed in Section 2. This algorithm utilises the characteristics of both the subsisting protocols and results in a more dominant and energy-efficient routing of data packets. Section 3 discusses the errors that can occur due to faulty or approximated location coordinates and how our algorithm surmounts these errors, thereby incrementing the energy efficiency that is the significant difficulty nowadays. The simulation model in section 4 compares our algorithm with the subsisting protocols of geographic routing. Finally, Section 5 concludes this paper.

II. SOME PRIOR DEVELOPMENTS

The principle for routing the packets that is established utilising the geographic location of the node is termed as Geographic routing. Its application includes routing in wireless networks which fixates on the notion that the primary node sends a packet to the geographical location of the next node instead of routing the packet predicated on the network address of the node. The concept of utilising information about location for routing was first suggested in the field of packet radio networks during the 1980s [1] [10] [11] and interconnection networks. In Geographic routing, nodes can resolve their location. Also, the source is informed about the destination [2]. With this erudition of each node, the packet could be forwarded to the destination node without much information of the topology of the network or any earlier revelation of the route. Geographic routing includes several approaches like uni-path, multi-path and flooding-predicated strategies [3]. The uni-path procedure mainly consists of two techniques, namely, face routing [9] and greedy forwarding. Avaricious forwarding brings the packet proximate to the destination node utilising the spatial information of the node.

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SFT.8

Research on Mechanism and Challenges in Meta Search Engines

Jyoti Mor1, Naresh Kumar, Dinesh Rai

Abstract— A Meta Search Engine (MSE) produces results gathered from other search engine (SE) on a given query. In brief MSEs have single interface corresponding to multiple searches. MSE employs their own algorithm to display search results. This paper reviews existing Meta Search Engines like Yippy, eTools.ch, Carrot2, qksearch and iBoogie commonly used for searching. This paper surveys and analysed the working of different result merging algorithms. Current research reviews MSE based on different approaches like clustering technique. Few MSEs are employing Neural networks for searching. Further it also discusses problem in existing MSEs.

Keywords. Search Engine, Meta Search Engine, Web page, Clustering

I.INTRODUCTION

Meta Search Engines are searching tool (as shown in Figure 1.1) which makes use of different Search Engine to produce resourceful and suitable results corresponding to a user query. The exposure of popular Search Engine e.g. Google, Alta Vista and Yahoo! is low and results are also low in terms of accuracy, thus Meta Search Engines are introduced. Meta Search Engines submits query from the user to other Search Engines such as , Yahoo!, Bing, Google, and Alta vista. Outcomes from the Search Engines are pooled to form clusters which are presented to the user as results [1]. Advantage of using Meta Search Engines is that there is an magnification of coverage area. Meta Search Engines employs indexing of other Search Engines to uphold search outcomes [1], form clusters and provide results to users in a modern way with appropriate labels [2]. Sometimes Search Engines provide more relevant than that of Meta Search Engines. Meta Search Engines cannot deduce query syntax completely and further do not interconnect with bulky search engines for their result development.
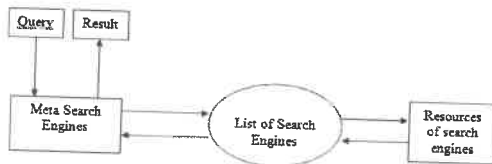

Figure 1.1 General Architecture of Meta Search Engine

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II. LITERATURE SURVEY

Literature survey has been conducted for past 10 years for which details are given below:

1) The Global KE Algorithm analyzed [3] the results mined from combination of Weighted KE Algorithm, Geo KE Algorithm, and URL Aware KE Algorithm. Google, Bing, Yahoo and Ask Search Engines are used.

The key features of suggested system are:

i. By passing on distributed user, different values of G are taken into account for ranking.

ii.End Users can limit similar domain pages by transient over the Domain Awareness constant (D) to extracted results.

iii. User be able to instruct to Search Engines so an enhanced process.

iv. It makes use of area specific information for extracting results and also delivers language familiar web pages.

On the basis of user profile suggested algorithm leads to superior ranking.

2) Raghuvashi K.P. analyzed the influence of optimized keywords system on efficiency of Meta Search Engines. It confers detailed process of keywords optimization for Meta Search Engine (MSE). Such keywords centered Meta Search Engine helps users to retrieve results.

3) Vijaya P. , Raju G. , Ray S.K. , proposed Meta Search Engine using ontology & Semantic Similarity Measure (SSM) [5]. SSM is developed to take semantic in keyword matching. In this MSE using SSM Concepts Sets matched with Title Sets. With three different ranking measures : relevancy to contents, title sets and ranking value are combined to improve the effectiveness of MSE. Performance of the MSE is evaluated using TREC-style average precision (TSAP) by using different sets of queries. The proposed semantic Meta-Search Engine delivers 80% TSAP which shows better results as compared to existing search engine and Meta-Search Engine.

4) Usearch Meta Search Engine explains [6] 2 aspects of ranking (i) Similarity of queries taken & searched results description (ii) Weightage for extracted outcomes of each Search Engine depending on information requirements of user. Common and Non Common resultslist are displayed by its modules. Authors analyzed that top 20 results for merged list are always in uppermost 3 results for every Search Engine.

5) An approach recommended in [7] emphases on outcomes in Meta Search Engine based on scoring of results

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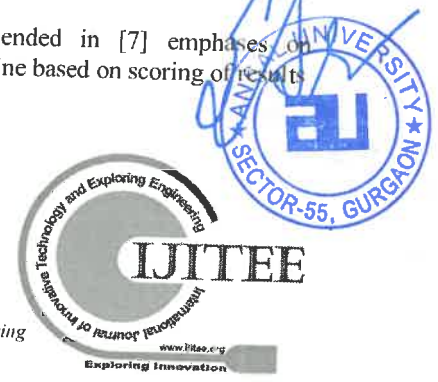
Dual-Band Circularly Polarized Stacked Sapphire and TMM13i Rectangular DRA

Richa Gupta[1], Garima Bakshi[2, *], and Aakash Bansal[3]

Abstract—This paper documents a novel design of dual-band dielectric resonator antenna exhibiting circular polarization at a high-frequency band of (7.85 GHz–7.93 GHz) in addition to linearly polarized lower frequency band of (5.12 GHz–5.49 GHz) using new materials, sapphire, and TMM13i for antenna design. With sapphire and TMM13i being immune to physical change, the novel design is suitable for weather radar applications. The obtained circular polarization reduces signal attenuation. A four-layered structure with sapphire and TMM13i stacked alternatively with aperture coupled feed is presented. Additionally, the corners of the patch have been truncated, and a slot has been etched in order to obtain the dual-band resonance and circular polarization respectively. The design is simulated using Ansys HFSS and fabricated for measurements. The VSWR (Voltage standing wave ratio) is measured to be less than 2 for both the bands. The simulated and measured gains of the antenna are 5.2 dBi and 4.9 dBi, respectively.

1. INTRODUCTION

At the present age of wireless communication, the necessities for the antenna design are endless. There is a need for faster, dynamic, and broader bandwidth antennas with a minimized instrumentation size to meet the present-day wireless communication system needs. It may be a prime task to meet this demand in the related RF wireless domain considering that the design of the antenna has to be encapsulated into the wireless instrument. From the last few years for electronic equipment wireless applications, there has been an extensive investigation on two groups of antennas, i.e., microstrip antenna and dielectric resonator antenna (DRA). Over the past decade, many single point-fed circularly polarized (CP) DRAs with wide 3-dB Axial Ratio bandwidths have been presented in the literature.

By using better feeding techniques broadband CP DRAs have been achieved in [1, 2]. Wide CP bandwidths can also be attained with novel dielectric resonator (DR) structures [3–6]. Recently, a modified cross-slot excited hybrid CP DRA with a wide bandwidth of 24.6% has been presented in [7]. Because of frequent progressions in the new wireless communication systems, CP DRAs with dual-band performance are desired. Many such types of antennas have been developed in the past [8–13]. Dual-band antennas are typically accomplished by exciting the elemental and higher-order modes inside the DRA. In [9], the fundamental cylindrical DRA was excited by two feeding strips to comprehend dual-band CP operation, and wide bandwidths of 12.4% and 7.4% are achieved for the lower and higher bands, respectively. However, the dual-band couplers inside the design significantly increase the design complexity of the DRA. An individually fed dual-band DRA has been presented in [14] by introducing a diagonal groove at the top face and removing two opposite corners of the DRA. The modes of a rectangular DRA with a massive aspect ratio is also utilized to appreciate wide dual-band CP DRA, and measured bandwidths of 15.7% and 6.0% are obtained in [15]. However, the antenna documented

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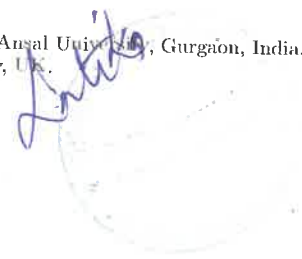
Constructive Neural Network: A Framework

Jaswinder Kaur, Neha Gupta

Abstract: In this paper, two techniques for construction of feedforward neural network are being reviewed: pruning neural network algorithms and constructive neural network algorithms. In pruning method, training starts with a larger than required network and subsequently delete the redundant hidden nodes and redundant weights till there is a satisfactory solution. In the constructive method, training of the network starts with minimum structure and then according to some predefined rule some more layers of neurons are added. A number of major issues are discussed that can be considered while constructing a constructive neural network i.e. how to select network architecture, network growing strategy, weight freezing, optimization technique, activation function and stoppage criteria

Keywords: Neural networks; Pruning algorithm; Constructive algorithm; Optimization technique and Activation function.

I. INTRODUCTION

Neural network research has come a long way and it has established well in the field of modeling linear and nonlinear data. There is lot of demand of adaptive techniques for solving neural network problems. Neural networks are used in many different applications like function approximation, pattern recognition, image processing, speech recognition, classification and other modeling tasks [1]. Multilayer feedforward neural networks are the most suitable models for solving problems of nonlinear mapping [2]. Neural network training consists of parametric learning and structural learning [3]. Neural networks are used in many applications like extraction of knowledge, forecasting (bankruptcy, weather), healthcare (clinical diagnosis, image analysis), communication, robotics, data processing and compression, approximation of function. This network learns adaptively, performs real time operations and is fault tolerant.

The multilayer feedforward neural network (FNNs) is widely used in many applications. The popularity of FNNs has been traced to the structure flexibility, capability of good approximation, and availability of large number of algorithms for training. The design of FNN for a given task comprises of many components / parameters, e.g. network architecture, activation function, learning algorithm and the other training parameters. The generalization performance of network and convergence time of network learning in FNNs depend on

how its constituents are selected like architecture of network

i.e. number of nodes in hidden layer and topology used for connections between nodes, activation function for each node and training parameters i.e. initial weights, learning rate etc.. The conventional FNN requires the architecture of network to be specified before the training starts [4]. In general, the designer of the network defines the network architecture by trial and error method [5]. While developing the neural network the number of elements needed for processing is not known in advance or found by trial and error method but are found while finding the solution of the problem. The generalization and training time of neural network are affected by the size of the network and the topology chosen for building the network. If the network architecture chosen is not appropriate, then the network can be underfitting the problem or overfitting the problem. The number of trainable parameters should be enough in number and should be able to capture from the training information the mapping function. For a given problem it is difficult to find the best network topology. A small network might not be able to learn the problem properly whereas a large network may overfit the data used for training resulting in poor generalization of the problem performance. From the desired output of the problem we can determine if the problem is a regression problem or classification problem. Regression problems involve approximation of continuous valued target function. It consists of discrete-continuous and continuous-continuous input-output mappings [6].

II. CONSTRUCTIVE NEURAL NETWORK

Nowadays, adaptive techniques are required for solving problems. In adaptive structure neural network the structure of the network is adapted while training the network according the problem [7]. The adaptive architecture algorithms are of two types: pruning neural network and constructive neural network. The pruning algorithm starts with network architecture which is larger than required and then the redundant nodes of hidden layer and weights are deleted. This process continues until we find a satisfactory solution [8]. In constructive neural network (CoNN) an opposite approach is followed in which network building starts with minimum architecture elements and then nodes in the hidden layer are added one at time. Advantages of constructive approach over pruning approach are, in constructive approach it is easy to build the initial network, it always finds a smaller network solution whereas, in pruning approach the starting size of the network is very difficult to decide. As there is no method available using which the network architecture can be decided, there is need for an algorithm which can find appropriate network architecture for the problem.

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Extended Bipolar Sigmoid Algorithm for Enhancing Performance of Constructive Neural Network

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ABSTRACT: To build a neural network the main point to be considered is how to select the model. Various approaches like Constructive Networks, Pruning or Destructive Networks, Hybrid Networks etc. can be used for building a neural network. In this paper constructive approach is considered for building the network. The proposed algorithm Extended Bipolar Sigmoid Algorithm (EBSA) based on constructive type of network built in cascaded style. It constructs a minimal neural network dynamically starting with one hidden node and one hidden layer, and new hidden layer with one hidden node is added when the network is not able to converge properly. When there is no significant reduction in error after some cycles the residual error is required to be reduced by adding a candidate node and analyzing the effect on mean square error. It is tested on ten real time regression problems. From the results it can be seen that it has better generalization performance and fault tolerance ability.

Keywords: Constructive Networks, Pruning or Destructive Networks, Hybrid Networks, Extended Bipolar Sigmoid Algorithm, Hidden Nodes and Candidate Nodes.

Abbreviations: EBSA, Extended Bipolar Sigmoid Algorithm; SC, Standard Cascade; MSE, Mean Square Error; Std. dv., Standard Deviation.

I. INTRODUCTION

A good network topology is required for achieving good performance of an artificial neural network. Artificial neural networks mapping ability is always dependent on the size and structure of the network. A large neural network with many hidden layers and hidden nodes may result in poor generalization performance. A small neural network built with few hidden nodes and few hidden layers may not be able to solve complex problems. It is difficult to select an optimal neural network topology. It is usually decided using trial and error method.

An artificial neural network is of layered type namely input layer, hidden layer and output layer. There can be one or more hidden layers, only one input layer and one output layer. Each layer receives its input from layer pervious to it and feeds the output to the layer next to it. This is a feed forward network. It can be single layered (one input layer and one output layer) or multilayered (one input layer, one output layer and one or more hidden layer). The output of hidden node is sum of weighted values of input on which activation function is applied. This output is applied to next layer till following the same procedure the last layer output layer is reached. Mostly Backpropagation algorithm is used for learning in theses neural networks. Only problem with this algorithm is the convergence rate is very poor [1].

The main problem for neural network building is selection of model (complexity). There are various approaches for altering the architecture of neural network namely constructive network, pruning or destructive network, hybrid (constructive-pruning) network etc.

II. APPROACHES FOR BUILDING NEURAL NETWORK

Constructive Network begins with network of small size and then it grows according to the problem to be solved. There is no need to decide the size of the network initially. This is the main advantage of this method. These are very efficient for hardware implementation as they are small in size [2].

Constructive networks are built by adding new features like hidden nodes, hidden layers and connections in turn changing the network topology. These are incremental networks which change the topology during the process of learning.

Constructive Algorithms can implement input output mapping of any problem provided with sufficient hidden nodes. The performance of the algorithm depends on size of network, technique of weight initialization, activation function used, number of hidden nodes, connections, number of layers and algorithm used for learning. The network can built using a number of input nodes and a number of output nodes which are decided by the problem in hand. The number of hidden nodes, layers and connections can be altered using various learning algorithms. While training the network the error is reduced using gradient descent algorithm like back propagation, quickprop etc. There are various activation functions like tanh function, Gaussian function, symmetric sigmoid function, asymmetric sigmoid function, radial function etc. which can be used in these networks [3].

Constructive networks can be expanded with layers and hidden nodes. Various methods can be used to expand the network namely Inverted Pyramid Construction in

SET-12
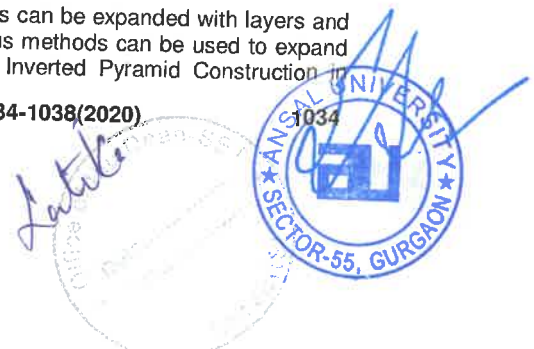
Bipolar Sigmoid Algorithm for Designing Constructive Neural Network

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Ansal University, Gurgaon, India.
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ABSTRACT: Constructive Neural Network is a reliable, fast and efficient technique of constructing neural network for solving difficult problems. Cascade Correlation algorithm is a popular method of constructing artificial neural network. It learns very quickly. Recurrent Cascade Correlation algorithm is a recurrent type of CCRA. It learns fast and does not have to deal with continuous time steps. A constructive neural network Bipolar Sigmoid Algorithm is being proposed. It employs the bipolar sigmoid function as its activation function. The weight freezing and another measure correlation score is employed in this algorithm. It operates every time on only one layer of inputs as other weights are frozen. It is tested on twelve regression functions for mean square error obtained on testing data set and hidden nodes. It develops compact neural network as compared to CCRA and has better generalization characteristics where hidden nodes have less chances of saturation.

Keywords: Constructive Neural Network, Cascade Correlation (CCRA), Recurrent Cascade Correlation, Bipolar sigmoid function.

Abbreviations: CCRA, Cascade Correlation; RCCA, Recurrent Cascade Correlation Algorithm; BSA, Bipolar Sigmoid Algorithm.

I. INTRODUCTION

Constructive Neural Network is a fast and very reliable technique of constructing a neural network. It is very efficient in solving problems of optimization, regression, classification and pattern recognition with ability of enormous parallelism [1]. It is grown according to the problem in hand to appropriate size with no need of guessing the number of layers in advance using trial and error method [2]. A network of size appropriate to the particular problem is generated during finding the solution of the problem.

Cascaded networks have higher advantage as the layers of hidden nodes responsible for processing are also easily adaptable to problem in hand. These types of networks have advantage of solving certain difficult problems over other known feed forward layered neural networks [3]. These types of networks automatically specify the size and topology of the network being used. Cascade Correlation Algorithms advantage is that most of the network is frozen and only one layer is trained at any given time. It reduces the herd effect in which the candidate hidden nodes are allowed to reply to the error. Candidate nodes which are in pool can learn the error without any interaction between the other nodes. It has been a very successful algorithm. Small networks do not have severe overfitting problem. Progress of training can be taken into consideration as an extra factor for determining the stoppage condition [4].

In the earlier work on Cascade Correlation Algorithm it has been written that different non-linear activation functions can be used at hidden layer [5]. There can be sigmoid activation function, radial activation function,

Gaussian activation functions and many more. It may result in more sophisticated and compact solutions to problems as compared to homogeneous network. Bipolar Sigmoid Algorithm (BSA) provides with the opportunity to use improved bipolar activation function for building a hierarchal cascaded network structure. Explanation is given in the following sections starting with some cascade algorithms followed by the new algorithm.

II. CASCADED ALGORITHMS

There are a number of Cascaded algorithms like Cascaded Correlation algorithm, Recurrent Cascaded Algorithm, Cascaded Error Projection, Casper algorithm and many more. Two of them are discussed below.

A. Cascade Correlation Algorithm (CCRA)

Cascade Correlation algorithm is a supervised type of learning algorithm used for developing artificial neural networks. This algorithm is very popular as it determines the network size and network topology on its own. There is no need to decide in advance the size, topology and depth of the network. It is very quick in learning. There is no back propagation through the network connections of the error signal. Even if the set used for training changes, its structures remains the same. This algorithm was designed to overcome the problems and limitations of back propogation learning algorithm (step size problem and moving target problem). The network consists of only input units, connections and output units initially. It allows only one hidden node to evolve while holding the neural network constant at any given time. There is no requirement of deciding the size of network

Weibull Parameter Estimation For Wind Energy At Different Elevations Using Graphical Method

Somya Tiwari, Neha Gupta

Abstract: Wind speed is the main driven element for power extraction from wind turbine. Wind turbine micro siting plays major role in power extraction at different hub height considering many factors including terrain type, wind shear, roughness, thermal effect, location, standard deviation of mean wind speed etc. Here in this paper extrapolation law is used for calculation of wind speed at different elevations with reference to measured data at 100m height from the site. Assessment of effect of shear factor at height of 120m and 150m on mean wind speed is done using power law. Data is available for year 2016 from January to December for site Baderan, district Bikaner, state Rajasthan, India. Using graphical method for extrapolated height wind speed for estimation of Weibull shape and scale factor. Wind shear coefficient effects the wind speed at different hub heights. As height is increasing wind speed is also increasing. Graphical method was used for computing Weibull shape and scale parameters for all three heights. Range of k is from 1.43 to 1.46 and c is in range of 8.35 to 8.54.

Index Terms: Elevation, extrapolation, regression, roughness, shear factor, wind energy, wind power density, wind speed,

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1 INTRODUCTION

Natural driven convection system of earth in which main source of energy is sun creates movement of air. Rotation of earth creates bending force and gravity of earth also acts on the air. Weather, seasons, day and night creates thermal effect due to change of temperature. Altogether these parameters affects the wind speed at different elevations above ground level. In previous time when measuring equipment were not available wind measurement used to be done by using estimation techniques. Wind speed & direction can be estimated but estimation of wind fluctuations in terms of peak gusts and deviations are not possible without instrument.

Generally anemometers with other measuring instruments installed at particular height to measure the wind data. Nowadays latest technologies are also coming up for measuring instruments. Sodar and Lidar measures the data for specific range of height like 10m to 300m. Modern wind turbine technology is gearing up and now latest turbine up to hub height of 200m is available [1]. But for wind data measurement in most of the countries mast height is in the range of 10m to 50m above ground level.

Terrain type also have its effect on wind speed at higher elevated height. Here wind shear factor impacts the calculation of wind speed at higher range. Using different equation for calculation of wind shear factor data at different height can be calculated. During data measurement process it is constrain that measuring equipment is mounted at one fixed height for one location. Due to effect of discontinuity and other factors Weibull distribution scale parameter c also get affected.

Near the earth surface wind is affected by topographical features. Due to which effect comes on wind speed data and as we know that turbine power is directly proportional to the cube of wind velocity so it effects the energy received from the turbine. In designing and selecting turbine for particular location if actual operating conditions are known it will help in efficient operating of wind turbines. Specific operational environment will help manufacturer to give best suited model of turbine which will help through the life span of wind turbine. This climate of wind is further sub divided into following types

- Macro wind climate large scale earth pattern
- Meso it is climate of a country
- Local wind climate is a limited area climate

Unevenness of surface of earth directly effects the air flow and its effect is up to 100m. Earth rotation causes the bending force and balancing of this force creates movement of wind available on earth.

1.1 Characteristics of Wind

Wind turbine power directly get affected by variation of wind speed. Analysis of wind data plays key role for selection of site for turbine installation [2]. For this purpose both onshore and offshore data get investigated using latest measurement instruments sea winds blended satellite measurement and gridded atmospheric model data [3]. For further exploration these wind characteristics are important which includes wind mean speed, wind direction, wind speed distribution etc.

Variation in generation of wind power is main task. To bring the soothing effect standard deviation, skewness and kurtosis changes are preferred [4]. Yearly wind characteristics, Monthly wind characteristics and Seasonal wind characteristics measurement on the basis of different parameters for accuracy of data [5].

1.2 Data description

Data for this analysis was provided by National Institute of Wind Energy, Chennai Government of India organization. Site is located at Baderan, district Bikaner, State Rajasthan, India for the period of January to December 2016. Site is located at deserted area and terrain is flat type. It is situated at Longitude 68°7′ E and 97° 25′ E
Latitude – 84'N and 37°6' N

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Statistical Analysis Of Wind Energy Prediction On The Basis Of Weibull Parameters

Somya Tiwari, Neha Gupta

Abstract: Wind energy potential can be assess using Weibull parameters. Weibull parameters are shape and scale parameters which gives best fit values for prediction of wind energy. In this research we are considering four methods namely Least square regression method (LSRM), Energy pattern factor method (EPFM), Method of moments (MOM) and Empirical method. One year complete data of wind speed at site Baderan of Bikaner Rajasthan, India on the interval of 10 minutes was analyzed and converted into required format of monthly average data. Standard deviation of this data series was arrived upon. With the help of Weibull parameters Weibull probability function and cumulative density function was derived. Considering mean wind speed and Weibull parameters wind power density on actual and Weibull methods was decided. Data clearly indicates that May is the month of maximum wind power density whereas November was with least. Data & statistical analysis throws a distinct feature of the site having good potential for harnessing wind energy.

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INTRODUCTION
Globally well accepted fact remains that conventional sources of energy are depleting fast with respect to rapid rise in demand of energy resource. Most of these conventional resources are potential carriers of carbon dioxides emissions and hence threat to natures sustainability which adds into already challenging issues like global warming. Not only this but also addition of other pollutants like particulate matters & hazardous waste. In this context need of clean and green energy resource becomes imperative. Wind can be an apt & sustainable solution for this energy need. Technological advancements have been like a boon for promoting use of renewable energy [1]. Wind and solar are emerging fields and are capable of integration with the daily and practical use of energy requirement. To be specific, wind energy has many applications and has gone beyond electricity generation. Government's active involvement, promotion and subsidies are making wind one of the promising and economically feasible option for clean and green energy in country [2]. Wind is movement of air across water bodies to land areas including hilly areas. Topological differences makes it these winds move from one place to other. Generation of wind happens because of heat and pressure variation in surface of earth. These variations and distribution brings in variations in speed and durations of wind. This very nature of wind enables designing of various system & gives variety of solutions in wind energy sector. Globally wind turbine installation has reached to staggering 597 GW, 50,100 Mega Watt added in the year 2018[3]. For development of wind farm preferred wind qualities are steady wind speed with minimal standard deviation. Wind speed in wind energy conversion system is known by cut off and cut in range. Preferred range of wind speed for wind energy power generation system is 3 m/s.

Due to mechanical component dynamic working in wind turbines wind speed is having safe range so that it will not damage the different parts or components of machinery. Safe speed for higher side is up to 20 to 25 m/s. In turbines locking system are attached if wind speed is unsafe for protection of turbine system. Wind speeds data is analyzed in long term and short term data series. Short term data helps for estimation of important parameters related to wind energy conversion system. Wind speed analysis is the field which is always predicted for better utilization of place & Technology. So economically better utilization of resources can be done for greater power production. Generally statistical models and physical nature of land scape are done for predicting the power output from wind. In landscape physical nature, temperature variation, pressure variation, roughness parameters, terrain type are considered. In statistical methods wind output power and other variables are studied and relation between them are established. Establishment of wind energy production site is depended upon power density of the site which is given by Kwh/m². [4], [5]. [6], [7], [8].

2 WIND SPEED DATA AND SITE LOCATION
Here we are considering wind data for year 2016 from January to December. We are considering whole calendar year data so that impact of all seasonal changes on wind speed is considered [9-10]. Wind data frequency of record is at the interval of 10 minutes. Data is further calculated in the form of hourly, daily and monthly basis. For considered site 10 anemometers are installed at the height of 100m at different locations and directions. For our calculations we are considering reading of four of the anemometers as some data is missing in rest of the six anemometers due to some technical issues. Height of anemometers is 100m North & South. Selected site is situated in district Bikaner of state Rajasthan of India. Location`s elevation is 194 meters, above Sea level, latitude and longitude are 28° 41' 25" North, 73° 46' 5" East, shown in Fig. 1.

3 METHODOLOGY
Performance of wind farm or individual turbine of any size mainly depends on wind speed. Establishment of wind energy production site is depended upon power density of the site which is given by Kwh/m². [9-11]

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SET-15

Performance Evaluation of Wind Turbines on the basis of Power Generation

Somya Tiwari, Neha Gupta

Abstract: Wind energy is one of the promising solution for future demand and need of energy. Main application of wind energy is in electricity sector. India is having potential for wind installation which is not yet fully explored. This paper compares the results from test rig small scale wind turbine and scale up data for different sizes of turbine as power from small size turbine was very low. A mathematical formulation for wind power is developed for finding total power from the available wind at certain speed. Three factors considered for analysis of three responses. Factors are Wind Speed, Rotor diameter and Swept area for getting response for wind power, torque and wind power density. For different wind speed and different rotor diameter wind power, torque and wind power density calculations done. Response surface method is used to design the experiments and ANOVA (Analysis of Variance) is used to analyze that experiment results are significant or not. Wind data analysis shows that wind speed gives a fairly good response in the range of wind speed 8m/s to 12m/s in practical grounds.

Index Terms: Wind Turbine, Power performance, Wind speed, Performance evaluation.

I. INTRODUCTION

As energy demand is increasing day by day rapidly due to which conventional sources of energy are depleting. We required a solution for the same which gives attention to all renewable sources of energy out of which wind energy sector is growing very fast. When compared with other sources wind energy has its own advantages.

Wind turbine are widely available for different size of rotor and hub height. General hub height range for wind turbine is in the range of 25m to 150m. latest hub height is upto 230m. Wind energy is one of the solution for emerging need of power in this modern world. As per the 2018 wind energy installed capacity it's now reached up to 600 Gigawatt worldwide. This amount of wind energy is quite sufficient for supplying 6% electricity demand of the world. In the year 2018 alone 53,9 Gigawatt capacity was added in the wind energy sector. If we compare it with the last year of installed which was 52,552 megawatt with the rate of growth of 10.8% in this year the rate of growth is slightly declined as it is 9.8%.

Wind turbine conversion system is made up of wind turbine, gear box, and generator. Here we have considered horizontal axis 3 blade rotor wind turbine. For optimization if numerical values are combined with graphical analysis it is better to understand the results and findings in the experimental work.

II. LITERATURE REVIEW

For total installed capacity and prospects [8] give a detail study for the same. A. Kaushik [9] provided solution methodology for performance of wind farm and performance curves for power, rotor diameter and blade pitch. R. Palllabazzer[5] provided simple method for evaluating energy output of wind turbine. A. Lombart [10] and his team worked for optimal siting of wind turbines and discussed wind resource evaluation methods.

R. K. Pachuari [7] emphasis on assessment of wind energy potential. M.Z. Jacobson [6] provided information for saturation of wind potential which gives information that by by 3030 for remote areas wind will surpass other energy systems. S.N. [1] discussed design of energy conversion system for next decade. Signe [14] and his team used a statistical approach with analysis of Variance ANOVA test for determining the parameters for better usage of wind power in Douala. Kim [13] used ANOVA test for clarifying whether the differences in efficiencies among NRE are significant. G. Aqila [12] taken four year wind data for getting accurate wind speed average data for power generation.

II. MATHEMATHECAL MODELLING OF WIND TURBINE

To understand the behavior of wind turbine and power output from wind turbine at different parameters a mathematical model is essential. To optimize the wind turbine design and decreasing the cost of power production using wind energy modelling.

In order to harness the wind energy the wind turbine rotor must allow some amount of wind to pass through its blades to move on behind the rotor.
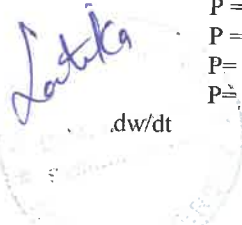
We know that, fundamental law of mechanics states that energy can be extracted only from a flow system. If air of mass m flowing at a speed v has kinetic energy E, then this mechanical energy is converted to electrical power, energy produced per unit time is

$$P = work/time$$
$$P = K.E. / t$$
$$P = dE/dT$$
$$P = \frac{1}{2} \ v^2$$
.dw/dt

SET-1

Segmentation of Brain Tumor using Glcm and Discrete Wavelet Transform

Alpana Jijja, Dinesh Rai

Abstract: To identify brain tumors at an early stage is a challenging task. The brain tumor is usually diagnosed with Magnetic Resonance Imaging (MRI). When MRI spectacles a tumor in the brain, the most common way of determining the type of brain tumor after a biopsy or surgery is to look at the results of a tissue sample. In this research to detect brain tumors faster and accurately the feature extraction techniques are used to segment the tumor affected area. One of such very effective technique of feature extraction measure is the Grayscale Co-occurrence Matrix (GLCM). This research focuses on the GLCM and Discrete Wavelet Transformation (DWT) technique to detect and label the tumor from an image based on the textures and categorizing it according to a tumor or non-tumor category. The convolutional neural network (CNN) uses these features to improve the accuracy to 91%.

Keywords: Convolutional Neural Network; Discrete Wavelet Transform; Feature Extraction; Grayscale Co-occurrence Method.

I. INTRODUCTION

The human body has a brain that is one of the most complex organs. The thought of being diagnosed with a brain tumor is one troubling and life-changing case. High-tech imaging has been used in the last few decades to see inside the body for better clarity and wider details. To detect and identify the wide range of brain disorders, MRIs, CT scans, ultrasounds, and PET scans are better technologies that greatly reduce the need for exploratory surgery to make a diagnosis. Various approaches have been used to enhance the identification of brain abnormalities in MRI images. In this research paper, the texture is one of an important feature used for evaluation and identification of the region of interest in an MRI image. Texture provides information in the spatial arrangements on color or intensities in an image. The texture is determined by the spatially distributed levels of intensity in the neighbourhood [1]. The textures may vary in randomness, regularity (or periodicity), directionality, and orientation despite their origin [2,3]. Therefore, if a pattern is quite random and natural it falls into the framework of texture. Texture analysis requires defining certain characteristics or properties that differentiate or define the textures. In the segmentation and classification of image recognition, texture

analysis can be used to identify the texture borders, edge direction movement [4] and long linear patterns [5]. Several authors have applied image processing techniques in various medical diagnosis applications detecting brain tumors using MRI images [6], lung cancer [7] and mammogram[8], which are methods of texture classification and texture characterization [9-11]. The most important challenge of texture analysis is to deal with shape, classification and segmentation [12-14]. Texture analysis can be helpful if characteristics in an image are more differentiated by texture than their intensities and therefore traditional thresholding techniques cannot be efficiently utilized [15]. The texture is calculated statistically across the image using a moving window. The statistical method calculates the coarseness and directionality of the texture with respect to the averages in a window of an image. However, the syntactic approach defines the structure of the entities and their distribution [16]. The important features of the statistical method to achieve a better classification, involve precision, contrast, entropy, homogeneity, autocorrelation function, power spectrum, relevant gray level statistics and matrices with co-occurrence.

II. LITERATURE REVIEW

Haralick et al., first proposed the probability of co-occurrence using GLCM in their 1973 research paper. This method is used to identify image traits and is commonly used in the field of biomedicine. The GLCM is computed in the first step, while the functionalities based on the GLCM are decided in the second step. Various fourteen textural features that include image texture information, has features such as homogeneity, linear gray-tone dependencies, contrast, number and existence of boundaries present, and image complexity [17]. Rajesh et al., research focuses on classifying cancer using MRI brain images. The technique used in this research is the Rough Set Theory which derives the characteristics of the MRI brain image classification for cancer using Feed Forward Neural Networks. The features extracted thus produces a classification efficiency of 90% [18]. Saban and Byram in their research have extracted various features using GLCM, LBP, LBGLCM, GLRLM, and SFTA algorithms. Thus after comparing the results of these algorithms, they obtained an effective algorithm for classification [19].

A. Copeland et al., in their research illustrated a strong high degree of correlation between synthetically derived textures and how different textures are perceived by human observers[20]. Manjunath and Ma implemented Gabor wavelet-derived features. Results from this work have shown that Gabor filter retrieval performance is better than typical wavelet-based orthogonal features.

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RESEARCH ARTICLE

HEAT TRANSFER WILEY

Impact of aligned MHD flow with inclined outer velocity for a casson nanofluid over a stretching sheet

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Abstract

The scope of the introduced study focuses on the analysis of heat as well as flow transportation in an oblique Casson nanofluid in the presence of an aligned magnetic field. The fluid is supposed to impinge obliquely on a sheet that stretches in both directions of the x-axis with heat generation. The moulded partial differential equations computed numerically with the shooting procedure by adopting the Runge Kutta Fehlberg method. The change in the behaviour of the emerging fluid parameters are described graphically and their results are shows in tables. The outcomes disclosed that the fluid velocity declined for Casson fluid parameter and the aligned angle of the magnetic field. In addition, with the increase in the Casson fluid parameter and aligned angle of magnetic field, the fluid temperature and concentration rise. The outcomes of this study may be beneficial to control the rate of heat and mass transportation as well as controlling fluid velocity in industry to obtain a final product of the desired quality.

KEYWORDS

aligned MHD, Casson fluid, heat generation, inclined outer velocity, nanofluid, oblique flow

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Impact of inclined outer velocity in MHD Casson fluid over stretching sheet

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Abstract: This manuscript discussed the influence of inclined outer velocity on heat and flow transference in boundary layer Casson fluid over stretching sheet. The flow is adopted to have magnetic field in the uniform manner on stretching surface. It has been taken that in both directions along the horizontal axis, the sheet is stretched. Using similarity transformations, the generating equations representing the heat and flow transportation are converted to ordinary differential equations. The flow is influenced by magnetic parameter, Casson fluid parameter, Prandtl number and the impinging angle parameter. The numerical solutions of the transformed equations have been computed by the Runge-Kutta Fehlberg method using shooting procedure. Behavior of emerging parameters is depicted graphically. Acceptance of the extant technique used in current study is correlated with the existing outcomes.

Keywords: Casson fluid; MHD; outer velocity; oblique flow.

I. INTRODUCTION

Numerous practical applications of heat and flow transportation in several divisions of manufacturing procedure lead attention of many researchers in this field of stretching surface. Crane(1970) initiated the work on stretching surface by analyzing the heat and flow characteristics over stretching sheet. Many researchers (Andersson, 1992; Cortell, 2005; Poply et al., 2013) further extended this study by analyzing the impact on flow characteristics in various situations and different surfaces, where theoretical results are covenant with experimental results and they are well documented in the literature. But, in some real-world application such as extrusion of sheet, fluid has some prescribed velocity. Many researchers analyzed the effect of the outer velocity and stagnation-point flow over stretching surfaces (Hayat et al., 2014; Hayat et al., 2014; Ishak et al., 2009; Poply et al., 2015, 2017; Siddheshwar & Meenakshi, 2016; Singh et al., 2010, 2010, 2011).

Many biological as well as industrial driven fluids such as multi-tude oils, lubricating greases, gypsum pastes, cleaning agents, ceramics, paints etc.,

flow behavior does not pertained to the theory of Newtonian fluid and its extensions. Therefore, numerous works have been done for non-Newtonian fluids such as viscoelastic fluid (Labropulu, & Pop, 2011; Abel et al., 2008) and power-law fluid by Abel et al.(2009).

The Casson fluid models containing several food stuffs and biological materials, especially blood. Mustafa et al. (2012) analyzed the behavior of heat and flow transportation of Casson fluid about a stagnation point using Homotopy analysis method (HAM). Duality and exactness of the solution in Casson fluid has been observed in Kameswaran et al (2014) and Bhattacharyya et al (2014) respectively. They stated that the dual solution exist in shrinking sheet as well as in stretching sheet. In Casson fluid, Sheikh and Abbas (2015) discussed the influence of homogenous and heterogeneous reactions emerged from uniform suction and slip from the surface. Effect of slip velocity on unsteady stretching sheet due to Casson fluid with variable heat flux has been examined by Megahed (2015).

The above literature survey reveals that no study had discussed so far the impact of magnetic field on oblique

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Deminiaturized Mode Control Rectangular Dielectric Resonator Antenna

Richa Gupta[1] and Arti Vaish[2, *]

Abstract—A modified feed line wideband circularly Polarized Dielectric Resonator Antenna (CPDRA) operating at 24 GHz is proposed in this paper. Deminiaturization of design is achieved by operating antenna at higher order mode TE_{117}. The antenna structure consists of a rectangular DRA with three rectangular slots. One at the centre and other two inclined orthogonally with respect to centre slot. The bottom surface of substrate contains the modified feed structure in which two stubs of the same dimensions are connected orthogonally to main microstrip line to provide a phase difference of an odd multiple of $\lambda/2$ for circular polarization. DRA with excitation through modified aperture coupled feed structure provides the simulated and measured impedance bandwidths of 16.28% (22–25.9 GHz) and 15.06% (22.1–25.7) GHz. The antenna provides the simulated and measured gains of 8.4 dB and 7.9 dB. The antenna is deminiaturised by 61% by operating antenna at higher order mode. The designed antenna has potential for millimeter wave and 5G applications.

1. INTRODUCTION

Dielectric Resonator Antennas (DRAs) are a promising candidate to replace more traditional and conventional antennas especially at millimeter wave frequencies and beyond. This is mainly attributed to the fact that DRAs do not suffer from conduction losses and are characterized by high radiation efficiency when being excited properly. However, at millimeter wave frequencies, antenna dimensions are significantly reduced, which presents a challenge for ceramic based designs, due to the brittleness and difficulty of fabrication. The adoption of DRAs driven by higher order modes has the advantage of improving manufacturability at millimeter-wave frequencies. As a matter of fact, for a given resonant frequency fo, the size (volume) of a DRA operating on a higher order mode is much larger, typically by one order of magnitude or more, in comparison to that of the same DRA resonating at frequency fo on the relevant fundamental mode. Therefore, fabrication tolerances have a smaller relative impact on higher order modes. Millimeter wave communications at high frequencies suffer from high propagation losses due to absorption by oxygen molecules in the atmosphere. Hence, improving the gain is considered as one of the most important targets in antenna design for such frequencies. Also, in order to overcome multipath, improper line of sight between the transmitter and receiver and phase issues, due to rain or snow in the air, a circular polarized antenna is required to assure high quality transmission or reception. Very few circularly polarized antennas are available for the k-band. Antennas have been reported which employ an X-shaped slot excited by a rectangular substrate integrated waveguide and backed by circular cavity to cover the impedance and axial-ratio bandwidths 4.26% and 1.5%, respectively [17].

As per the literature survey, numerous techniques are enforced to scale back size of Microstrip antenna. Size may be reduced at a specific frequency by increasing the permittivity of substrate [1]. The

The design of a turtle-shaped dielectric resonator antenna for ultrawide-band applications

Piyush Sharma[1] · Arti Vaish[1] · R. S. Yaduvanshi[2]

Abstract

A novel type of turtle-shaped dielectric resonator antenna is proposed for use in ultrawide-band applications. Nine layers of different shapes of slabs are integrated and excited through a conformal strip. This staired-pyramid-type structure provides a large surface area for higher radiation efficiency. The integrated antenna is built on a defected ground structure to enhance the bandwidth of the antenna. The simulations and measured results for a fabricated prototype antenna for use in ultra-wideband applications are found to be in good agreement. The proposed antenna operates from 3.0 to 10.9 GHz (bandwidth 7.9 GHz), providing an impedance bandwidth of 114%. The ultrawide bandwidth is achieved by proper mixing of lower and higher modes generated through the slabs.

Keywords Turtle-shaped · Dielectric resonator antenna (DRA) · Ultrawide bandwidth (UWB) · Conformal strip excitation · Defected ground structure (DGS)

1 Introduction

The US Federal Commission of Communication (US-FCC) allotted the frequency spectrum from 3.1 to 10.6 GHz for ultra-wideband (UWB) applications in 2002 [1]. Since then, investigation and design of antennas that can achieve the impedance bandwidth required for such UWB applications have presented challenges to academics, scientists, and industry. The UWB technology offers low probability of interception, making it useful in modern radars as well as positioning, medical imaging, cognitive radio (CR), and weapon detection applications. Nowadays, three types of UWB antenna are primarily used commercially: (1) vertical monopole antennas with various shapes such as square, circle, triangular, and trapezoid plates [2], (2) printed monopole antennas using several excitations schemes such as microstrip [3] and coplanar waveguide (CPW) [4] with different defected ground structures (DGS) [5], and (3) dielectric resonator antennas (DRAs) of various shapes such as rectangular, cylindrical, A-shaped, H-shaped, conical-shaped, stacked rectangular DRA, and monopole dielectric resonators (DRs). DRAs offer several advantages over microstrip and other antennas, including a low profile, high radiation efficiency, no conductor loss, low temperature coefficient, and wide impedance bandwidth. The main reason for this is that a microstrip antenna radiates from its two narrow sides, while a DRA radiates from its surfaces, depending on excited modes. The impedance bandwidth of a DRA is directly related to the dielectric constant of the resonator material. Various types of feeding mechanisms, such as microstrip line, coaxial, aperture coupled slot, and coplanar waveguide (CPW) techniques, have been used to excite DRAs [6]. Several noteworthy techniques such as tetrahedron-shaped [7], stair-shaped [8], W-shaped [9], H-shaped [10], U-shaped [11], L-shaped [12], trapezoidal [13], T-shaped [14], two-segment [15], P-shaped [16], gammadion cross-shaped [17], E-shaped [18], and other hybrid structures [19] have been introduced in DRAs to increase the bandwidth from 30% to 110%.

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Mobility Management Techniques in 5G Wireless Networks

Check for updates

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Abstract: *Current innovation in the field of Mobile and Wireless network will increase the use of mobile devices which procreated in an outburst of traffic passing through the internet. Due to the explosion of traffic mobility management has become a challenge in future mobile and wireless networks. To deal with such an explosion, mobile networks are becoming flatter as compared to previous hierarchical mobile networks. This paper presents a detailed survey of solutions for currently mobility management such as Centralized mobility management techniques for mobile and wireless networks, described the limitation of Centralized Mobility Management which is hierarchical and centralized in nature and discussed an approach which removes the limitation of Centralized mobility management called as Distributed mobility management. This paper also discussed two different approaches of Distributed mobility management such as Client based Distributed mobility management and Network based Distributed mobility management.*

Keywords: IP Mobility Management, Centralized mobility management, Distributed Mobility Management, 5G Wireless Networks.

I. INTRODUCTION

Societal Innovation will give rise to changes in the way mobile and wireless communication system is used. Applications and industries of today and the future such as E-banking, E-learning, Innovative health care services, Self-driving cars will continue to generate and becoming more mobile [1]. The today's scenario of human to machine communication is expanding by a great increase in the numbers of communicating machines requiring more networks. In the future, it is moving towards machine to machine communication also called the Internet of things which will make our life more comfortable, efficient and safe [2]. Now a day's consumers demand more amount of traffic which claim for low latency and more capacity. The mobile user's access internet while moving from one place to another and the amount of traffic generated by the users are growing rapidly in the last few years. Now users can connect to various networks which are accessible and build different active sessions concurrently while moving. Due to these requirements, there is a need for a 5G wireless network that can afford more facilities to a user to apply his hold in a colossal way to make him realize the actual growth. The main

contrast between the prevailing generation and expected 5G techniques according to a common user need to be something more than maximum throughput. Some other demands include:

1. High data rates and greater coverage should be there at cell edges.
2. Different parallel data transfer paths.
3. Data rate must be 1 Gbps or more while moving.
4. WWWW (World Wide Wireless Web) applications.
5. Lower battery consumption.

In 5G wireless networks due to the increase in number of mobile user and the merging internet and wireless communication mobility management emerges as serious problem for mobile and wireless network. Mobility management give the mechanism for maintaining for two services such as active session continuity and address reachability. During active session continuity it maintain current active session of MN by preserving the same IP address provided by local network for the whole session even though the mobile host is changing its point of attachment and during the address reachability it keeps the same IP address for a very long period of time [3]. The IP address will remain the same throughout and used for serving incoming packets. In this paper, firstly analyzed the techniques of mobility management like Centralized Mobility management and its limitation and then presents the new comprehensive scheme for mobility management called Distributed mobility management. The organization of the paper is as follows: Section II presents an overview of current Mobility management schemes in 5G. Section III gives us the review of the literature on Mobility Management. Section IV analyses and compares the different techniques of mobility management in 5G and summarizes the issues and challenges of the techniques. Finally, Section V concludes the paper.

II. MOBILITY MANAGEMENT IN 5G

Mobility Management facilitates the current network to detect where a mobile user is currently attached for delivering the packets i.e Location management and it maintains a mobile user connection while it is changing its location or point of attachment i.e Handoff Management. Mobility management technique depends upon Centralized or Distributed networks.

A. *Centralized Mobility Management:*

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Research Article

Novel Approach for Automatic Grading of Hyperemia in Four Different Classes as per IER using VGG16

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Abstract: Hyperemia is a condition associated with conjunctiva of the eye. The work in this paper focuses on evaluating the redness of bulbar conjunctiva of human eye. The condition can be a result of numerous factors like injury to eye, friction due to dust particles, improper or prolonged use of contact lenses and it can also be an indication of serious condition like glaucoma. It is evident that if this condition is not given timely treatment then it can result into irreversible eye damage. Several methods have been proposed in past to grade hyperemia but due to human intervention involved the results were subjective in nature. This work proposes the use of pre trained convolutional neural network like VGG16 (named after Visual Geometry Group) to analyze and evaluate the degree of redness. The different classes of redness are in accordance with the Institute for Eye Research (IER) earlier referred as Cornea and Contact Lens Research Unit (CCLRU) grading scale which is universally accepted. The level of redness can further aid in specific line of treatment depending upon the ocular disease related if any. A hybrid model is proposed to automatize the entire process to achieve the desired objective.

Keywords: Convolutional Neural Networks, Hyperemia, CCLRU, VGG16, Bulbar Redness

I. INTRODUCTION

Healthcare sector is amongst the numerous areas which are being benefitted by the advancements of technology. The situation of healthcare industry further got revolutionized in developed nations after digitization. With concepts like telemedicine, teleconsultation lot of time is saved, and timely and hassle-free patient care is being provided to the patient. On the other hand, the remote rural areas of developing nations are stills struggling to receive efficient and timely patient care. Inadequate number of health care workers, insufficient resources are amongst the several contributing factors for limited access to better health care facilities in these countries. The poorer sections of these areas are worst affected and in countries like India approximately 70% of the population resides in these areas. It has been reported in [1] that 39% of primary health care centers in Jharkhand, India doesn't even have adequate medical staff. Hence there are several health care related issues that need attention. One of them is eye care. In rural areas of developing nations like India, the ratio of optometrists to patient is very skewed. Improved medical facilities can be provided to people by integrating technology with health care. The work proposed in this paper proposes an automated approach to categorize hyperemia in the bulbar conjunctiva of the human eye into four different classes. Conjunctiva is a thin membrane covering the entire face of the eye as well as the inner area of eyelids. The membrane is further classified into three categories namely palpebral conjunctiva, bulbar conjunctiva, and fornix conjunctiva [2]. The proposed work focuses on the redness in the bulbar conjunctiva portion. The role of this membrane is to protect the eye from any external injury. It produces tears to wash off any dust particles that might irritate the eye. The damage to this sensitive membrane can be result of several pathological conditions. These conditions can vary from mild to severe. If not given timely treatment, it can result in irreversible eye damage. The work proposed focusses on a specific condition called hyperemia or injected conjunctiva which is a result of engorged blood vessels in the bulbar region of the eye.

Numerous works have been done in past decade to measure the degree of redness in this area of eye. Earlier work induced redness through solutions and compared the degree of redness with already established reference images