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1.

Authors: Joseph Zacharias, Jayakrishnan S B, Vijayakumar Narayanan

Paper Title: 82 GHz Millimeter-Wave Transmission Over OFDM ROF System

Abstract: Orthogonal Frequency Division Multiplexing (OFDM) based signal transmission over Millimeter-Wave Radio-over-Fiber (mm-Wave RoF) systems is proposed. For that an external modulator and an optical interleaver are used to generate dual octupling-frequency optical millimeter waves. Simultaneously. The frequency of local oscillator signal is reduced largely due to frequency octupling. OFDM signal is used as the downlink data for transmission. Most of the advanced systems are using OFDM based signal such as LTE 4G or WiMAX network. So a system that uses RoF technology to transmit OFDM signal by mm-Wave will be effective. In this proposal, the advanced technologies are combined in order to get an effective model to transmit data at higher speed with a reasonable price.

Keywords: Orthogonal frequency division multiplexing, Radio over fiber (RoF), Millimeter-wave, wavelegth reuse.

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2.

Authors: Anila V M, Seena Thomas

Paper Title: Detection of Diabetic Retinopathy from Fundus Images through Local Binary Patterns and Artificial Neural Network

Abstract: Diabetic retinopathy (DR) is one of the most frequent cause of blindness and vision loss in diabetic patients. The diabetic retinopathy is detected earlier, the better the chance that it can be effectively treated and further vision loss prevented. This condition increases the importance of automated detection of the disease. This work focuses on distinguishing between diabetic retinopathy (DR) and normal fundus images by analyzing the texture of the retina background. Local Binary Patterns (LBP) are used as texture descriptors. They are the powerful grey-scale texture descriptors that is commonly used because of its computation simplicity. Local Binary Pattern is based on looking at the local variations around each pixel, and assigning labels to different local patterns and the labels are evaluated and used in the classification stage. Probabilistic Neural Network (PNN) is the classifier that is used for the classification of abnormal and healthy images. This work suggest that LBP is a robust texture descriptor for retinal images and the proposed method analyzing the retina background directly and avoiding difficult lesion segmentation such as exudates, microaneurysms etc. can be useful for diagnostic aid.

Keywords: Diabetic Retinopathy, Local Binary Patterns, Probabilistic Neural Network, Fundus Images.

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3.

Authors: **Wael Zaghloul ElSayad, Hussein Mahmoud Hussein**

Paper Title: **Reducing the Negative Effects of Dust Storms using Solar Energy to Recycle Plastic Waste**

Abstract: A sandstorm is characterized as one that whips up extraordinary loads of sand into the air, forming a dense cloud above the ground in the process. While most of the sand will rise higher than 50 cm, some sand particles can even ascend to the height of 2 meters. According to Wikipedia, the average diameter of the particles carried by such dust storm winds will vary between 0.15 and 0.30 mm. Wind speeds such during sandstorms have been recorded at up to 16 km per hour and more, while most storms continue to blow for between three hours to five hours. The dust unleashed from sandstorms continues to pose severe environmental concerns in certain Arab and Middle East countries, causing great hardships to its citizens in the form of lost income and widespread infrastructure damage. Perhaps more importantly, when it comes to measuring the effects on people's health, it has been well documented that sandstorms have, in many cases, led to both the death and destruction of livestock, crops and even human beings. Based on the above factors, scientific researchers continue to work tirelessly to confront sandstorms in an effort to both prevent and alleviate this dangerous natural phenomenon. This particular study will look to establish a low-cost system of erecting plastic trees built from solar energy and recycled plastic waste in order to reduce the risks of sandstorms.

Keywords: Middle East countries, recycled plastic, sandstorms, solar energy.

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4.

Authors: **Safia Yasmeen, G. Manoj Someswar**

Paper Title: **Design & Development of a Suitable Model to Validate New Estimation Approaches for Effective Performance**

Abstract: As COCOMO is a non-proprietary model, its details are available in the public domain, encouraging researchers and practitioners in the software engineering community to independently evaluate the model. There have been many extensions independently reported where machine learning techniques are used to generate effort models from the original COCOMO model. In our research work, we proposed a calibration method by transforming the model equation into a linear form and estimating the model parameters using standard linear regression techniques. This calibration method has been adopted by the COCOMO development team in their calibration work. COCOMO has also been a model used to validate new estimation approaches such as fuzzy logic and neural networks. The COCOMO development team continues to calibrate and extend the model using different calibration approaches on more augmented data sets and our research work is mainly based upon these approaches wherein we have evolved newer and better approaches over the existing approaches and gave a realistic outlook to the very purpose of achieving the best performance.

Keywords: Calibration Technique, Maintenance Function Point (MFP), Maintenance Impact Ratio (MIR), Developed for Reusability (RUSE), Required Development Schedule (SCED), Required Software Reliability (RELY)

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5.

Authors:	**M Veera Chandra Kumar, K. Satyanarayana, M.N.V.V. Brahmam**
Paper Title:	**An SMC based RZVDPWM Algorithm of Vector Controlled Induction Motor Drive for Better Speed Response with Reduced Acoustical Noise**

Abstract: In this paper, an sliding mode controller (SMC) based Random Zero vector Distribution PWM (RZVDPWM) algorithm of vector controlled induction motor drive for better speed response with reduced Acoustical Noise is analyzed. In order to mitigate the difficulty faced in the conventional Space Vector PWM (SVPWM) approach, the proposed RZVDPWM algorithm is created by taking the concept of Simplified PWM sequence. This algorithm is developed by using the concept of random number generation technique. Simulation studies are carried out to validate proposed RZVDPWM algorithm, the results obtained are presented and compared. The simulation results shows that the overall performance of SMC based RZVDPWM drive is better when compared to SVPWM technique under different conditions of operation.

Keywords: Simplified PWM sequence, SVPWM, RZVDPWM, Vector control, SMC

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6.

Authors:	**Thamizharasi A, Jayasudha J.S**
Paper Title:	**Face Recognition of Enhanced Contrast Limited Adaptive Histogram Equalization using Feature Extraction Method**

Abstract: Face recognition is most widely useful for social networks and surveillance applications. Face recognition is complex if there are variations in light. The proposed work is to develop an illumination invariant face recognition system by enhancing Contrast Limited Adaptive Histogram Equalization (CLAHE). The face recognition of Enhanced CLAHE is done using feature extraction method. The features extracted are DWT statistical features, moments, texture, regional features, shape ratios, Fourier descriptors and facial features from Enhanced CLAHE images. These features are combined to create a feature vector. The feature vector is classified using Support Vector Machine (SVM) classifier and Multilayer Perceptron (MLP) neural network. The efficiency of feature vector is tested with three public face databases AR, Yale and ORL. The testing result proves that feature vector has high recognition accuracy rate.

Keywords: face recognition, CLAHE, Enhanced CLAHE, feature vector, illumination invariant, SVM and MLP

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classifier.

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7.	**Authors:**	**K. Murali Krishna, S. Ashok Reddy, K. Siva Shankar**
	Paper Title:	**MPPT for Standalone PV System under Partially Shaded Condition using Genetic Algorithm**
	Abstract: sun oriented vitality is spotless, renewable and its decentralized character is suitable well at the scattered State of the zones with low thickness of populace. The expense of Electricity from the sun oriented cluster framework is more costly than the power from the utility network. In this way, it is important to work the PV framework at most extreme proficiency by following greatest force point at any natural condition. In this work, the Genetic algorithm is utilized to control the operation of the PV exhibit keeping in mind the end goal to separate the most extreme force. The outcomes acquired are looked at and talked about.	**35-41**

Keywords: PV System, Maximum Power Point Tracking (MPPT), Genetic algorithm, P&O algorithm.

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8.	**Authors:**	**Preethi W, Binu Rajan M R**
	Paper Title:	**Atomic Web Service Reliability Prediction**

Abstract: Web service is one of the main supporting underlying technologies in Service Oriented Architecture (SOA). This work is focused on atomic web service reliability, as one of the most important non-functional properties. Service reliability can be defined as the probability that a service invocation gets retrieved successfully, i.e. correct response to the service invocation gets successfully retrieved under the specified conditions and the time constraints. A model-based collaborative filtering approach CLUS (CLUStering) is used to estimate the reliability of an ongoing web service. It considers user, service and environment specific parameters to provide a more accurate description of the service invocation context. Incorporating K-Strings clustering algorithm is highly prominent for clustering of high dimensional data rather than using K-Means algorithm. This aims to generate higher accuracy and efficiency to the prediction model.

Keywords: reliability prediction, K-Strings, atomic web services, QoS prediction, K-Means.

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9.

Authors: **Hameed R. M. Al-Mishmish, H. S. Al-Raweshidy**

Paper Title: **Interface and Traffic Handover Mechanism in Multi-homed Mobile IP Node**

Abstract: Network Mobility is a relatively new networking concept aimed at improving the reliability and scalability of data communications within vehicles moving at high speed. The growing use of IP devices in portable applications has created the demand for mobility support for entire networks of IP devices. Users are expected to be connected to the internet from anywhere at any time this facilities will provide to own user to more than mobile devices, there are several mobile devices such as mobile phone, laptop and PDA and other type, all these devices could have multiple network interfaces, these interfaces enable mobile devices to maintain ongoing communication while its moving from one point to another.

Keywords: Mobile IP, IETF, Network Mobility, Network Simulator (NS2), Multi-homed node, Interface selection mechanism, Throughput, Delay, Jitter.

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Authors: **M Indu, Kavitha K V**

Paper Title: **A Varied Efficient Approach on Sketch Based Image Retrieval System**

Abstract: Especially with the vogue of touch screen devices, retrieval of images that match with a hand-drawn query sketch became a highly desirable feature. Since 1990s, query-by sketch has been an extensive study. Due to the lack of effective and efficient matching solutions they are still very challenging. Compared to face recognition, face photo recognition using face sketch is relatively a younger area. The exceptional triumph of search techniques have encouraged to revisit the problem and focused at solving the problem of sketch based image retrieval. To this end, a novel method is presented here which is as follows: for each image in the database feature extraction is carried out and edge correspondence metric is computed which will be stored. Similarly for the query sketch the same steps are repeated. For each value the query sketch searches for a match score. The database image with highest match score is the retrieved match against the query sketch from the face photo database. An optimized algorithm is also incorporated for images that are corrupted by various types of noises. This method can handle non-facial factors such as such as hair style, hairpins, and glasses. During investigation results show that the proposed method outperforms several state of-the-arts in terms of accuracy and running time.

Keywords: Face sketch synthesis, Feature vector, Edge correspondence metric, Sketch based image retrieval.

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11.

Authors: **Gailan Abdul Qadir, Hassan Ali Salman, Sabah Shehd Abdulabas**

Paper Title: **Energy Ventilation Air Flow Electronic Meter**

Abstract: The measurement of ventilation losses is one of several types in the energy balance of building, depends on nonlinear single slope type analog to digital convertor (NL-ADC), in this papera digital electronics method is described which is useful in measuring the ear flow via leakage per meter of length of windows and doors. The pressure difference signal is provided as an electrical voltage through appropriate transducer, the digital instrument receives the voltage and processes it together with input coming data of the living area geometry, the resulting readout is digital output number representing of the air flow in the building, the energy ventilation meter will be tested in two different room to measure energy conservation in building related to ventilation losses measurement.

Keywords: (NL-ADC), measurement, papera digital electronics, measurement. Appropriate transducer

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12.

Authors: **Vijay Kumar, Rakesh Kumar**

Paper Title: **Optimal Analysis of Economic Load Dispatch using Artificial Intelligence Techniques**

Abstract: Applications of artificial intelligence to economic load dispatch problems are discussed in the paper. The fuelcost equation of a thermal plant is generally expressed as continuous quadratic equation. In real situations the fuel cost equations can be discontinuous. Continuous and discontinuous fuel cost equations are explained here as thermal palnts cost equation are continuous which are further a quadratic equation.GA technique used for 30 bus test system have continuous fuel cost equations. Various results compared with conservative quadratic programming methods to analyze superiority of the suggested artificial intelli-gence technique. A 10-generator system each with distributed areas is considered and particle swarm algorithm engaged to reduce the cost of generation. All obtained results compared with other conventional methods.

Keywords: GA, ELD, PSO, Evolutionary methods

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13.

Authors: **Arathy S. Mohan, M. Nazeer**

Paper Title: **Experimental Investigation on the Properties of Gap Graded Aggregate Medium Strength Concrete**

Abstract: Concrete is a mixture of cementations material, aggregate, and water. Aggregate is commonly considered inert filler, which accounts for 60 to 80 percent of the volume and 70 to 85 percent of the weight of concrete. Thus concrete properties are highly affected by physical properties of its aggregate. The particle size distribution of coarse and fine aggregate (grading of aggregate) may have an effect on concrete behaviour. However, due to the inherent difficulties related to the characterization of fine sized particles, little research has been made to evaluate the effect of grading. In the present investigation, packing density of combined aggregate is considered as the criteria for aggregate gradation thus selecting four combinations of gap graded aggregate for making medium strength (M40) concrete mixes. The workability, density and strength results from these concrete mixes are finally compared with conventional concrete to propose a suitable aggregate gradation. Within the premises of this study, it is concluded that gap graded concrete, though of a relatively stiffer and drier mix, can be placed and finished without undue effort for the non-structural, massive construction works demand less workability wherein continuously graded concrete has been customarily used heretofore. A considerable saving in cement content, sand and notable improvements in mechanical properties are the realistically achievable advantages through the use of gap graded concrete. Good control and, above all, care in handling, so as to avoid segregation, are essential.

Keywords: aggregate, gap graded, gradation, packing density

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14.

Authors: **Ambika P, Binu Rajan M.R**

Paper Title: **Link Based Overlapping Community Detection and Medical Data Mining of Social Media for Cancer Prognosis**

Abstract: Social media, ranging from personal messaging to live foras, is providing unlimited opportunities for patients to exchange their views on their experiences with drugs and devices. Here the aim is to understand the correlation between user posts and positive or negative judgment on drugs along with its side effects in cancer patients with particular emphasis on analysing the notion of community detection within this social network by analysing link properties. The proposed system is a two-step analysis framework where positive negative user sentiments are evaluated using data mining tools and techniques followed by identifying overlapping community structures (influential user modules) within the user forum. The two-way process utilizes the comments on internet message boards (cancer research forums) to infer the acceptance and effectiveness of a drug in cancer treatment and maps to the influential user within the network. In the first stage of the current study, opinion labels are developed about each drug based on opinion analysis from user posts and each word is given weightage per node using data mining tools. In the second stage, networks are built from the search results of the forum, a network ranking system reflecting the opinion formation about the drug is developed. Different from traditional algorithms based on node clustering, the proposed method is based on link clustering to discover overlapping communities. Since links usually represent unique relations among nodes, the link clustering will discover groups of links that have the same characteristics. The current approach effectively searches for different levels of organization within the networks and uncovers dense modules using partition density factor. Finally, the accuracy of novel link based overlapping community detection method is compared with the traditional network based community detection model using graph benchmark. Thus the experiment is used to determine opinion from consumer and identify influential users within the retrieved modules using information derived from both term occurrence and word frequency of data and network-based properties in an accurate way.

Keywords: Community detection, Health Informatics, Multi-scale, Markovprocess, Modularity, Overlapping communities, Random walks, Social media, Stability.

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Authors: **Ambika Omana Menon, Sakuntala S. Pillai**

Paper Title: **A Paradigm Shift from OFDM to WPMCM as the Preferred Multi-Carrier Modulation Technique**

Abstract: As of now, Multi-Carrier modulation (MCM) is considered an effective technique for both wired and wireless communications. Studies have been done by different researchers in this area and analysis of the comparative advantages and disadvantages of the different options for multi-carrier modulation have been extensively done. The place of OFDM, which was once considered as a very strong candidate for multi-carrier modulation technique, has almost been taken over by its successor, WPMCM. This paper reviews the paradigm shift from OFDM to WPMCM as the preferred multi-carrier modulation technique.

Keywords: Multicarrier modulation, WPMCM, OFDM, Discrete Wavelet Packet Transform.

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Authors: **M. Sghiar**

Paper Title: **Turbulent Functions and Solving the Navier-Stokes Equation by Fourier series**

Abstract: I give a resolution of the Navier-Stokes [2] equation by using the series of Fourier. Résumé: Je donne une résolution de l'équation de Navier-Stokes [2] par les séries de Fourier.

Keywords: Navier-Stokes, Fourier, Séries de Fourier.

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17.	**Authors:**	**Alaa Ibrahim, Ibrahim Marouf**
	Paper Title:	**Methods and Techniques of Conservation Process for the Heritage Building Walls**

Abstract: The issue of the conservation of architectural heritage has been given much attention on the political, cultural and academic level due to the heritage values for being cultural wealth for the nations. However the remains and ruins of these properties come under threat due to the propagation of structural work resulting from industrial development and urbanization. Hence, it has become the responsibility of government institutions to ensure the protection and conservation of humanity's cultural heritage. That's in a manner which strikes a balance and ensures harmony between the preservation of cultural heritage and the changes required by social and economic developments. All efforts have to be exerted to fulfill these two objectives in a spirit of understanding, in a planned timely manner and employing efficient technologies. Therefore, the main aim of the research is to enhance and highlight the new techniques and methods that used for maintaining the heritage building's walls that could achieve the execution of temporary and definitive works. The most used methods that have been successfully implemented for several years for conserving walls are wall grouting injection, Cintec anchoring system, Fiber reinforced polymers, using prestressed steel in buildings consolidation and scaffolding systems .The research methodology is following a qualitative approach through first, defining each technique and it's details (eg, characteristics, way of execution ,advantages , disadvantages and case study) . Second, by analyzing, evaluating the techniques and ensure its efficiency. The implementation of these techniques requires skilled labors, not only at the execution process, but also in the planning stages. The main mission of the conservators of the restoration process is to select the technique that keeps the heritage value of the building without deteriorating the building characteristics, elements or historical materials. To sum up using these techniques with accurate and suitable implementation methods, resulted in conserving the values of the heritage buildings and could safely transform them to the next generations. (The researcher 2016)

Keywords: Grouting injection, Cintec anchoring system, Fiber reinforced polymers, prestressed steel, Scaffolding systems.

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18.	**Authors:**	**Md. Lutfor Rahman, Najmus Saquib Sifat, Md. Zakaria Rahman, M. Ali**
	Paper Title:	**Thermal Performance Analysis of a Closed Loop Pulsating Heat Pipe without Insert and with Insert**

Abstract: In this paper, thermal performance of a Closed Loop Pulsating Heat Pipe (CLPHP) without insert and with insert inside the tube has been investigated. The effect of different parameters like working fluid, the filling ratio, inclination angle and the input heat load on the thermal performance has been analyzed thoroughly. In this study, CLPHP is made from long capillary copper tubes with inner diameter of 2.0 mm and outer diameter of 3.0 mm. The heat pipe is bent into eight U-turns and divided into three sections: evaporator section (50 mm), adiabatic section (120 mm) and condenser section (80 mm). Adiabatic section is maintained by using aluminum foil surrounded by appropriate insulation. An insert made of copper wire with diameter 0.5mm is used throughout the tube of all three sections. Methanol and Ethanol are used as working fluids with different filling ratio varied from 40% to 60% in steps of 10%. The thermal resistance has been investigated with different inclination angles (viz. 0°, 30°, 45° and 60° from vertical) at various heat input from 10 to 100W in the steps of 10W. The result shows that, the thermal resistance decreases as heat input increases. CLPHP with insert structure shows better performance than the CHPHP without insert structure particularly at 45°inclination angle. CLPHP without insert structure shows better performance than the CHPHP with insert structure at 00inclinations. Methanol with 40% filling ratio and Ethanol with 60% filling ratio shows the best performance at 0° inclination angle for CLPHP without insert structure. CLPHP with insert structure shows better performance than the CLPHP without insert structure at high heat input particularly at 45°inclination

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angle.

Keywords: CLPHP, filling ratio, inclination angle, working fluid, insert structure and without insert structure, PHP, thermal resistance

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Authors:	**Rishikesh Mishra, Prashant Thakare, Shreyas Patil, Kartik Kannav, Nikunj Vitalkar**
Paper Title:	**VC-T Engine An Advancement in 4-Stroke Engine**

Abstract: The most important challenge which the car manufacturers are facing today is to offer vehicles that deliver excellent fuel efficiency and superb performance while maintaining cleaner emissions and driving comfort. This paper deals with the VC-T (Variable Compression Turbo) engine technology which is going to be one of the advanced technology in the IC engine, and also deals with it's working principle and it's advantages. VC-T is the brand new technology in four cylinder petrol engine family. The VC-T engine is able to maximize it's efficiency by running a higher compression ratio at idle or low speeds and boost performance by switching over to lower compression ratio under hard acceleration or heavy engine loads. The VC-T is able to adjust it's compression ratio anywhere between it's lower limit of 8:1 to higher limit of 14:1. According to Infiniti, the engine intrinsic smoothness allows it to achieve the NVH (Noise vibration & harshness) level similar to that of V6 engine. The paper rounds off with conclusions and an agenda for future research in this area.

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Keywords: VC-T Engine, Compression ratio, Nissan Infiniti, Efficiency.

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20.

Authors:	**Vivian Brian Lobo, Nazneen Ansari, Annies Minu, Sehba Siddiqui, Flevina D'souza, Jeba Sangeetha Augestin**
Paper Title:	**Smartphone Selection using Analytic Hierarchy Process**

Abstract: Analytic hierarchy process (AHP) is a measurement theory that is used to obtain ratio scales from distinct as well as continuous paired comparisons, and such comparisons can be selected from either tangible measurements or a basic scale that imitates virtual strength of feelings and predilections. AHP is a decision-making process that was developed by Prof. Thomas L. Saaty (1970), and it aims to quantify virtual significances for a given set of alternatives on a ratio scale—based on decision maker's judgment—and focuses on the importance of instinctive decisions of both

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a decision maker and the steadiness of comparison of alternatives. AHP has been an instrument at the hands of decision makers since its discovery and is one of the widely used multicriteria decision-making methods. There have been some exceptional works that have been broadcasted based on AHP in various fields such as scheduling, best alternative selection, allocation of resources, conflict resolution, and optimization. AHP's forte is its suppleness to be integrated with techniques such as linear programming and fuzzy logic that allows a user to excerpt benefits from all techniques and helps to achieve a desired goal. Similarly, we too use AHP to meet our desired goal. That is, in this study, we consider four smartphones (i.e., ph1, ph2, ph3, and ph4) and determine which smartphone is the best by considering numerous criteria such as cost, camera, internal memory, battery life, and style and generate a rank of alternatives using AHP.

Keywords: analytic hierarchy process, battery life, camera, cost, criteria, internal memory, smartphone, style

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Paper Title: **Investigation of Satisfiability Based Solution Approach for Graph Coloring Problem**

Abstract: Graph k-colorability (for k ≥ 3) problem (GCP) is a well-known NP-Complete problem. There are many approaches proposed to solve graph coloring problem till date. There is an alternative approach to solve it efficiently by Satisfiability which is first known NP-Complete problem. We can reduce any NP-complete problem to/from SAT. Reduction from graph k-colorability problem to satisfiability is an important concept to solve it using efficient SAT solver. In this paper, we are presenting a polynomial 3-SAT encoding technique for k colorable graph. Our formulation generates total (((k-2)*|V|) + (k*|E|)) clauses in 3-CNF for k-colorable graph. We tested our encoding formulation approach on different graph coloring instances of DIMACS[8][9] and then investigated the solution of graph coloring problem as a decision problem based on SAT approach using powerful SAT solver Minisat 2.2.

Keywords: 3-SAT, CNF, DNF, graph coloring, NP-Complete, k-colorable, chromatic number, DIMACS.

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