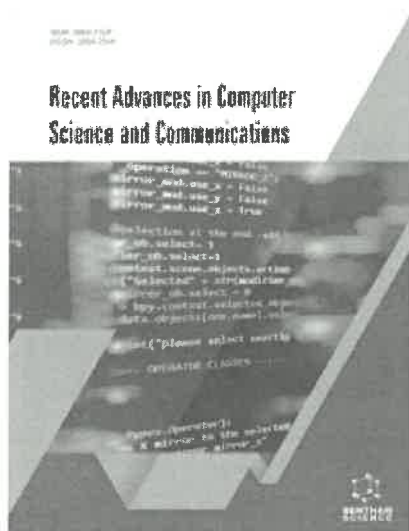




Link to the institutional website where the first page/full paper (with author and affiliation details) is published.

Appendix-II

(2021 - 2022)



Facial Feature Extraction for Emotion Classification Using Fuzzy C-Mean Clustering

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Authors: Sharma, Garima; Singh, Latika; Gautam, Sumanlata

Source: Recent Advances in Computer Science and Communications (Formerly: Recent Patents on Computer Science), Volume 14, Number 7, 2021, pp. 2210-2219(10)

Publisher: Bentham Science Publishers

DOI: <https://doi.org/10.2174/2666255813666200129143033>

Abstract References Citations Supplementary Data

Background: Automatic human emotion recognition system is an active area of research due to its wide applications in the field of Human Computer Interaction(HCI) systems, driver fatigue monitoring systems, surveillance systems, human assistance systems, smile detectors etc.

Objective: The study presents a fuzzy based approach to extract facial features from input image and builds different classification models to classify the image into two emotion classes i.e. happy and neutral. The system has potential implications in the field of smile detection systems, customer experience analysis and patient monitoring systems.

Methods: The proposed system determines the dimensional attributes (l-attribute and w-attribute) of mouth region extracted from the facial image using viola-jones algorithm. The feature set is generated by using a total of 136 images from JAFFE, NimStim and MUG dataset. The differentiating power of the attributes is then evaluated using five different classification models.

Results: The accuracy, precision and recall is determined for each classification model. The results show good accuracy of 70% for the grayscale JAFFE and NimStim databases and 95% for the coloured MUG database.

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A snapshot review: In vitro characterization of lipid membranes and their applications

Review Published: 04 August 2022

Volume 7, pages 551–561, (2022) Cite this article



MRS Advances

Aims and scope

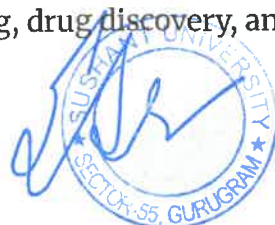
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Swati Mishra & Monika Khurana

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Abstract

Cell membranes are the crucial boundaries of living cells that determine their structure, sustenance, and functioning. In order to understand the functioning of these biological membranes, it is important to determine their structural composition. These biological membranes are complex in nature and hence experimentation on natural membrane systems remains a tedious task. Preparing model membranes that are similar in structure to natural membranes for characterization and study purposes has been in practice for decades and is a work in progress. Artificial membranes ranging from lipid suspension as vesicles to supported lipid membranes are created using various techniques namely self-assembly, vesicles fusion, and Langmuir–Blodgett technique. These biomimetic membrane models are studied using characterization tools such as Calorimetry, Infrared Spectroscopy, Fluorescence Spectroscopy, X-ray scattering, and Neutron scattering. This paper reviews different methods of preparing artificial membrane models and various biophysical techniques to characterize them with deep insights into applications of these membrane models across various fields such as biosensing, drug discovery, and drug delivery.




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Independent Detection of T-Waves in Single Lead ECG Signal Using Continuous Wavelet Transform

Original Article Published: 26 September 2022

Volume 14, pages 167–181 (2023) Cite this article



Cardiovascular Engineering and
Technology

Aims and scope

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Pooja Sabherwal , Monika Agrawal & Latika Singh

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Abstract

Introduction

In the ECG signals, T-waves play a very important role in the detection of cardiac arrest. During myocardial ischemia, the first significant change occurs on the T-wave. These waves are generated due to the repolarization of the heart ventricle. The independent detection of T-waves is a bit challenging due to its variable nature, therefore, most of the algorithms available in the literature for T-wave detection use the detection of the QRS complex as the starting point. But accurate detection of Twave is very much required, as clinically, the first indication of a shortage of blood supply to the heart muscle (myocardial ischemia) shows up as changes in T-wave followed by other changes in the morphology of the ECG signal.

Materials and Methods

In this paper, an efficient and novel algorithm based on Continuous Wavelet Transform (CWT) is presented to detect the Twave independently. In CWT, for better matching, a new mother wavelet is


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Analysis of Emerging Automation Tools in Industry

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Received: 02 Sep 2022; Received in revised form: 18 Sep 2022; Accepted: 25 Sep 2022; Available online: 03 Nov 2022

Abstract— The increasing demand of speed and accuracy for software testing in the industry requires advanced testing tools. Efficient software testing can only be done by utilizing necessary and appropriate testing methods and frameworks. High quality development can be achieved by using effective automation testing. This paper compares various software testing tools and will aid professionals and researchers in this field.

Keywords— Software Testing, Test Automation Tools, Software Automated Testing.

I. INTRODUCTION

Software testing is the process of verifying whether a product or application delivers the expected outcome. It is done to prevent bugs, improve efficiency of the product and reduce costs. The main intent of software testing is to find faults and errors [1], so as to solve them before the end product reaches the customer. Testing can be done manually as well as by using automated tools. Manual testing and automated testing are the two methods of testing. Manual testing is also called as static testing. It is carried out by the tester. Automated testing is also called as dynamic testing [2]. Manual testing and automated testing both are important testing methods but, in most cases, automated testing is considered better than manual testing.

The purpose of this paper is to provide an extensive study on various automation tools available in the market. A number of testing tools are explained in the study along with their pros and cons. The paper is divided as follows: Section 1 is the introduction, Section 2 describes automated testing, Section 3 discusses about Test Automation Tools Categories, Section 4 provides brief descriptions of automation tools along with their advantages and disadvantages. Section 5 presents a comparative analysis of various automation testing tools, Section 6 concludes the study.

II. AUTOMATED TESTING

Automated testing is the process of using software to compare the actual outcomes of the product with the expected outcomes. Automated tests are conducted in such a way that they do not require human intervention [4].

Automated testing can be used in many areas instead of manual testing but it cannot replace manual testing completely. Both testing methods work together to give desired results. The benefits of automation testing over manual testing are as follows:

- Higher Testing Efficiency
- Greater Accuracy and Reliability
- Reusability and Repeatability of Test Scripts
- Improved Test Coverage
- Simulation of User Environment
- Boost in Team Morale
- Higher ROI: Saves Time and Cost
- Volume and Simultaneity
- Early Detection of Bugs [3]

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Construction of Indian Currency Identifier for Visually Impaired



Kamal Thakur, Zeeshan Akhtar, Antim Dev Mishra, Monica Chaudhry

Abstract: Visually impaired people often face difficulty to identify a nominal of money. Indian currency notes are available in different sizes and colours with tactile qualities that enable the visually impaired to identify different currency notes, but these tactile makers are worn out with usage. Various smartphone-based apps are available for note identification but using a smartphone by a visually impaired person gets difficult. So, it is necessary to design a device that supports visually impaired people in note identification. So, to overcome this problem we have designed an Indian currency identifier that will help visually impaired and blind people to identify Indian banknotes easily in less time using a colour sensor and sound module that will give output in audio form. The device makes use of a colour sensor and Arduino Uno to differentiate between currency denominations. The RGB output from the colour sensor is matched with the pre-stored RGB value. If RGB values fall inside any denomination pre-stored value the mp3 module is activated and the output voice is played from the store mp3 according to the result obtained from the Arduino Uno by mp3 module. A prototype was made to see the feasibility which has a Sensitivity of 85.71% and a Specificity of 66.66% to identify Indian currency notes. The cost of the construction of this device would be around 700-800 INR.

Keyword: Blind people, Colour sensor, Currency identification, Indian currency recognition, Visually impaired.

I. INTRODUCTION

Recent estimates show that there are 285 million people who are either blind or visually impaired in the world [1] out of which 8 million blind people and 54 million visually impaired are in India [2]. Blind people often face difficulty to identify bank notes. It is extremely difficult to do daily routine tasks independently for the visually impaired and to identify Indian currency notes, particularly while accepting their money back when shopping for their daily needs is a challenging task. Indian currency notes are printed on different size and colours of paper with tactile qualities that enable visually impaired people to identify between different currencies notes but the problem with these tactile makers are that markers are worn out with usage. In 2016 Indian

government announced the demonetization of all 500 INR and 1000 INR Mahatma Gandhi series banknotes and also announced new series of 500 INR and 2000 INR banknotes, which made it difficult to identify by blind or visually impaired people due to almost similar sizes. While old notes had a difference of 10mm, either in width or length in each denomination, for new notes this has been reduced to 4mm, making it difficult for persons with the visually impaired to identify. Various smartphone-based apps are also available to identify the different currency notes but using a smartphone by a visually impaired person is difficult as they require to click correct focused pictures of a currency note. Most of the devices are developed for the United States and Canada which identify their currency but none of these devices can identify Indian currency [3-6]. So, it is necessary to design a device that supports visually impaired people to identify the nominal of money. The study aims to construct an Indian currency note identifier for visually impaired people.

II. LITERATURE SURVEY

iBill U.S Banknote Identifier has become a popular device for currency identification in the U.S, iBill has the advantage of being a small compact handheld device that gives output as a currency denomination by voice or patterns of vibrations. A visually impaired person inserts one end of the bill into the device, clicks the button on the device and the device gives an output of the currency denomination. The disadvantage of iBill is that it does not identify foreign or counterfeit banknotes or Indian currency. iBill is based on the contact image sensor, which is an expensive device but given free of cost for visually impaired people or blind by the US Government [3]. Tel-money Tel-money also uses similar technology (contact image sensor) as used in the iBill. Tel-Money gives voice output designed for people who have a visual impairment. It works for U.S. currency in denominations from 1 to 100 dollars. The user slides the currency into the money identifier and then presses a button, and the device reads the bill's denomination and announces the currency denomination [4]. The Canadian Bank Note Reader gives a voice output and reads all Canadian bank notes now in circulation and those expected to be in circulation in future [5]. Sri Lankan currency note identifier identify banknotes for visually impaired people, this system is based on colour sensors and photodiodes. According to the nearest neighbour method, the Euclidean distance (Kleyszig, 1973) between the sensed parameters of the note to be recognized and the centroids of each domain is calculated and compared. The note is then classified based on the value which falls near to domain.

Manuscript received on 21 October 2022 | Revised Manuscript received on 31 October 2022 | Manuscript Accepted on 15 November 2022 | Manuscript published on 30 November 2022.

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Monika Khurana

Challenges and Opportunities of E-learning in Education in the 21st Century

Authors Monika Khurana, Vikas Poply, Reshma Nagpal

Publication date 2022/12/30

Source SAMRIDDHI: A Journal of Physical Sciences, Engineering and Technology

Volume 14

Issue 04

Pages 143-146

Description The pandemic in the last year has brought a rapid change in the education system in India. The entire education community across the country has shifted to online mode within a few days. The education in 21st century brings lot of challenges to online teaching and learning. This paper identifies the challenges the teachers and learners face and the opportunities of

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MACHINE LEARNING APPROACH FOR LOAD BALANCING OF VM PLACEMENT CLOUD COMPUTING

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Abstract

Load balance is the technique of distributing loads to a number of services in various networks. As a result, loads want to be distributed around cloud-based networks, so that each resource plays virtually the same function at different times. The crucial pre-requisite is to provide a quantity of resources to maintain queries in order to operate the program more effectively. Every cloud provider relies on day-to-day load balancing services that allow customers to increase the amount of CPUs or memory to compare their resources to help suit their needs. Its services are optional and unique to the client. We Proposed and Recommend and analyze all of the load balancing algorithms that run in the Cloud Analyst tool and suggest a new modified algorithm that will improve response time and lower costs.

Keywords: load balancing , machine learning VM placement , cloud computing.

INTRODUCTION

The Load balancing is used widely for all kinds of computing infrastructure, such as servers, computer clusters, disk drivers, network connections, CPUs. The method of allocation of tasks between the current nodes of a distributed system is to increase both the efficiency of resources and the response time. It also removes this situation when some nodes are overloaded while other nodes are loaded. With the benefit of the customer base for cloud computing systems, there are a great deal of users on the Internet, it becomes important to confirm that they are deployed on all present repositories for the achievement of high user satisfaction. Load balancer is also useful for other technologies and cloud computing work. This is achieved at multiple stages. In VM level, the scale is mapped in such a manner that the mapping can be performed in order to sustain the load of different programs for current physical computers. At the host level,

the scale is mapped to be organized digitally The computer and host resources will execute separate tasks from the program.

Cloud load balancing is a technique used to deliver unwanted local complex loads to all nodes. It aims to promote better customer interaction and resource allocation[15], ensuring that no single node is overwhelmed and therefore increases the overall performance of the device. The right balance of loads can be useful for the efficient usage of available resources to reduce water use. It also helps to encourage scalability, to enforce failures, to avoid vendors and bottlenecks, to minimize response times, etc. from the above factors, and to accomplish load balancing in clouds that can be accomplished by utilizing two factors: green computing.

• Energy Consumption Reduction -- Load Balancing is useful for preventing overheating by balancing workload in each cloud node, thereby reducing power consumption.



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Reconnecting the City to its Riverfront: A Case of Kolkata

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Abstract

Kolkata, one of the major metropolitan cities in India, owns a great and heroic past, bearing its unique heritage and culture, owes its creation to its strategic location along the east bank of the river Hooghly, a distributary of the river Ganges. The banks of the river, once the lifeline of the people, remained bustling with different activities. They have become deserted areas, dotted with shabby old structures, disconnected with the city, and devoid of erstwhile scenic views. In the recent past, the riverfront has become the backyard of the city, derelict of any desired activity leading to escalating environmental and urban issues. The river-edge precincts and its neighbourhoods have died out in terms of their social association with the river. It is evident that the city has lost the social eminence of its riverfront because of the indifferent behaviour towards its revival. A discussion in response to the social issues of addressing the urban concern for finding a suitable solution or method to revive the lost values of an urban river has been elaborated within the paper. This research paper explored the principles of building a framework of developing tools for redefining the value of an urban riverfront through strengthening its cultural and social bonds with the city.

Keywords: Degrading Urban Landscape, Riverfront Development, Social Recognition, Cultural Exposure, Heritage Restoration



THEORETICAL BASIS FOR EVOLVING TAXONOMY OF THE AFFECTIVE DOMAIN

By

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Date Received: 03/04/2021

Date Revised: 16/07/2021

Date Accepted: 28/12/2021

ABSTRACT

One of the central problems in curriculum design is to find a rational basis for the selection of subject content and the assessment of student progression. Without good reasoning, decisions about the selection of content according to various levels of complexity would be left to personal opinion of the faculty members and a reasoned debate among peers about what to choose and what to omit in a curriculum would not be possible on a logical basis. In 1956, celebrated educationist Benjamin Bloom along with his associates introduced the revolutionary Taxonomy of Educational objectives (popularly known as the Bloom's Taxonomy) as a resolution to the above problem. Since then, the Bloom's taxonomy has become the cornerstone of curriculum design across the world, particularly in the context of outcome-based education. Taxonomy of educational objectives are composed of three parts, Taxonomy of Cognitive domain, Affective domain and Psychomotor domain. However, only taxonomy of cognitive domain (popularly known as the Bloom's taxonomy) was adopted rapidly by educationists across the globe. Several Accreditation agencies require an educational program to align their curriculum to Bloom's taxonomy (cognitive domain) for ranking and grading of curriculum aspects of educational programs at school and university level. However, the graduate attributes which are outlined by educational administrations not only make cognitive aspects as part of learning objectives, but also affective and psychomotor aspects, since cognition, affective and psychomotor development complete all dimensions of a student's development process. While the theoretical basis for Bloom's taxonomy of cognitive domain can be traced to classification of knowledge structures itself, the theoretical basis for Taxonomy of affective domain is still ambiguous. It could be one of the reasons for its meagre adaptability in educational curriculum. This paper is an attempt to research for a theoretical basis for evolving taxonomy of the affective domain by tracing developments in the field of Axiology.

Keywords: Curriculum Design, Bloom's Taxonomy, Affective Domain, Cognitive Domain, Value theory, Axiology, Outcome Based Education (OBE).

INTRODUCTION

Bloom's taxonomy is an indispensable tool which is available to a faculty for outlining measurable learning outcomes in any program of study. Bloom's taxonomy also helps in deciding the complexity level of concepts and

assignments that should be placed in the beginning, middle and end of a course of study. It gains greater significance by the fact that several University accreditation authorities (example NAAC) judge the validity of a curriculum by comparing it to the vocabulary defined in Bloom's taxonomy (NAAC, 2019). The popularity of bloom's taxonomy may be attributed to European countries, which were signing the Bologna declaration in 1999, in order to facilitate reliable mobility of students across universities and countries (Enders & Westerheijden,



This paper has objectives related to SDG



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India thwarts China's Hostile Takeover Bids during Covid-19

by

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Abstract

The world today is facing a unique situation in the form of Covid-19 with unique consequences and effects. There is not even a single aspect of the society and economy which is untouched by this pandemic and corporate sector is also one of them. The companies are struggling in terms of finances. The financial crunch being faced by them is making the companies more vulnerable to takeovers/acquisitions. All this situation in the world has brought China in the forefront and as reports are suggesting Beijing has been expanding its economic footprint throughout the world and specially in South Asia.

In order to protect the companies in India, our government proactively changed its FDI policy to prevent opportunistic takeover. This move prevents the 7 countries with which India shares its land borders from making any investments in India and also prevents China from making any investments in India through these countries. The aim of this article is to analyse the situation of takeovers and especially hostile takeovers in India. It will also analyse the situation with respect to takeovers before and after Covid-19.

