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Department of Computer Science and Engineering

Faculty Journal Publications Year (2022-2023)

S.No	Name of the Faculty	Designation	Title of the Paper	Journal Name/Source Title	Date, Month & Year	Volume	Issue	DOI / Online link	ISSN (journals)	Indexed (SCI/SCI-E/SCOPUS/ABDC/UGC-Care/IEEE/Nature)	Affiliation	AY
1	Dr.G.ArunKumar	Associate Professor	AI-enhanced Metric Package for Assessing Reliability in Service Composition for Drug Discovery and Development	Latin American Journal of Pharmacy	4/3/2023	Vol. 42	No.1	http://actafarmbonaere.nse.com.ar/index.php/latamjpharm/article/view/140	0326 2383	SCI/SCOPUS	MIT S	2022-23
2	Dr.G.ArunKumar	Associate Professor	Lung Cancer Classification and Prediction Using Machine Learning and Image Processing	BioMed Research International	8/22/2022	Volume 2022,	Article ID 1755460, 8 pages	https://doi.org/10.1155/2022/1755460	2314-6141 (Online)	SCI/SCOPUS	MIT S	2022-23
3	Dr.G.ArunKumar	Associate Professor	Detection and Classification of Skin Cancer by Using a Parallel Deconvolutional Network Model	IEEE	3/17/2022	ISBN-978-1-6654-5687-6	1	DOI: 10.1109/IIHC55949.2022.10059956	IEEE	Scopus	MIT S	2022-23
4	Dr R Nidhya	Professor	A secured and optimized deep recurrent neural network (DRNN) scheme for remote health monitoring system with edge computing	Automatika Journal for Control, Measurement, Electronics, Computing and	4-Apr-23	64	3	https://doi.org/10.1080/00051144.2023.2195218	Print ISSN: 0005-1144 Online ISSN: 1848-3380	SCI/SCOPUS/S CI-E	MIT S	2022-23
5	Mr. T. Thangarasan	Assistant Professor	INTERPRETATION OF VEGETATION USING AI IN QGIS (QUANTUM GEOGRAPHIC INFORMATION SYSTEM)	GIS SCIENCE JOURNAL	12/28/2022	9	12	DOI:20.18001.GSJ.2022.V9I12.22.40483 / https://gis-science.net/volume-9-issue-12-2022/	1869-9391	Scopus/UGC-Care	MIT S	2022-23
6	Mr. T. Thangarasan	Assistant Professor	Analyzing and Detecting the Boundary in Medical Images and Utilizing Big Data	International Journal of All Research Education and Scientific	3/25/2023	11	3	http://www.ijaresm.com/volume-11/issue-3	2455-6211	WoS/UGC-Care	MIT S	2022-23
7	Mr. T. Thangarasan	Assistant Professor	Lung Cancer Prediction Using Machine Learning Technique Over Big Data	Neuro Quantology	7/10/2023	20	8	doi: 10.14704/nq.2022.20.8.NQ44098 / https://neuroquantology.com/issue.php?volu	1303-5150	Scopus	MIT S	2022-23
8	Mr. T. Thangarasan	Assistant Professor	Modified Imperialist Competitive Algorithm(MICA) for smart heart disease prediction IOT system	IEEE Explore	6/21/2023	NA	NA	10.1109/ICDCECE57866.2023.10150732	NA	Scopus	MIT S	2022-23

✓	Mr. Muthugurunathan. G	Assistant Professor	Discover Customer's Gender based on Online Shopping Behavior Using Machine Learning	GIS Science Journal	9/5/2022	10		20.18001.GSJ.2022.V1 015.23.411096	1869-939	Peer reviewed	MIT S	2022-23
10/	Ramya P	Assistant Professor (Grade -II)	A Novel Hybrid clustering Model For Wireless Sensor Networks	IEEEXplore	4/3/2023	NA	NA	10.1109/ICECONF57 129.2023.10083615	2473-2001	Scopus	MIT S	2022-23
11/	Dr S Elango	Assistant Professor	Super Artificial Intelligence Medical Healthcare Services and Smart Wearable System based on IoT for Remote Health Monitoring	IEEE Xplore	14-Mar-23	180 - 1186	23-25 Jan. 2023	10.1109/ICSSIT55814 2023.10060928	978-1-6654-7466-5	Scopus	MIT S	2022-23
12/	Dr S Elango	Assistant Professor	Analysis of Artificial Intelligence in Medical Sectors	IEEE Xplore	16-Jan-23	CFP22CB 2-DVD	ICAISS-2022	10.1109/ICAISS55157 2022.10010820	978-1-6654-8961-4	Scopus	MIT S	2022-23
13/	Dr.R.Sudhakar	Associate Professor	Digital Image Anti-Forensic Model Using Exponential Chaotic Biogeography-Based Optimization Algorithm	The Computer Journal	20 November 2022	Volume 65	Issue 11	https://doi.org/10.1093/comjnl/bxac148	ISSN 0010-4620,EISSN 1460-2067	SCI	MIT S	2022-23
14/	Dr. D. J. Ashpin Pabi	Assistant Professor	The Role of Knowledge Management in Hr Activities Within Organization	European Economic Letters	April 2023	13	1	http://eelet.org.uk	2323-5233	UGC	MIT S	2022-23
15/	Mr. B. Anandaraj	Assistant Professor	HUMAN ACTIVITY RECOGNITION USING LOGISTIC REGRESSION ALONG WITH MACHINE LEARNING ALGORITHMS	NOVYI MIR Research Journal	4/13/2023	VOLUME 8	1	-	ISSN NO: 0130-7673	UGC	MIT S	2022-23
16	Mr. B. Anandaraj	Assistant Professor	Lung Cancer Classification Using SVM And CNN Models	Bulletin For Technology And History Journal	4/13/2023	Volume 23	1	-	Issn No : 0391 6715	UGC	MIT S	2022-23
17/	Mr. B. Anandaraj	Assistant Professor	Electric Vehicle Charging Load Forecasting and Scheduling using DL	Journal of Novel Research	4/12/2023	Volume 8	1	-	ISSN: 2456-4184	UGC	MIT S	2022-23
18/	K.Sathish	Assistant Professor	IoT based Mobile App for Skin Cancer Detection using Transfer Learning	IEEE EXPLORE	22 DEC 2022	NA	NA	https://doi.org/10.1109/I-SMAC55078.2022	2768-0673	SCOPUS/IEEE	MIT S	2022-23

19	BSH Shayeez Ahamed	Assistant Professor	Currency Classification Using Deep Learning	International Journal of Advances in Engineering and Management (IJAEM)	07.07.2022	4	7	10.35629/5252-0407317323	2395-5252	UGC-Care	MIT S	2022-23
20	BSH Shayeez Ahamed	Assistant Professor	A Deep Learning-based Methodology for Predicting Monkey Pox from Skin Sores	2022 IEEE 2nd Mysore Sub Section International Conference (MysuruCon)	16-17 October 2022	408	2	10.1109/MysuruCon55714.2022.9972746	22443817	Scopus	MIT S	2022-23
21	BSH Shayeez Ahamed	Assistant Professor	Skin Cancer Detection Using Deep Learning	Bulletin For Technology And History Journal an UGC Care Group II Approved Journal	27.04.2023	23	4	https://bthnl.com/volume-23-issue-5-2023/	0391-6715	Scopus/UGC-Care	MIT S	2022-23
22	M. Bommy	Assistant Professor	SURVEY ON CYBER SECURITY THROUGH WATERMARKING AND DEEP LEARNING TECHNIQUES	European Journal of Molecular & Clinical Medicine	September 2022	9	7	https://www.researchgate.net/profile/Mkjayanthi-Kannan/publication/366684902_SURVEY_ON_CYBER_SECURITY_THROUGH_WATERMARKING_AND_DEEP_LEARNING_TECHNIQUES	2515-8260	Web of Science	MIT S	2022-23
23	M. Bommy	Assistant Professor	Lung Cancer Prediction Using Machine Learning Technique Over Big Data	NeuroQuantology	5/2/2023	Volume 20		doi: 10.14704/nq.2022.20.8.NQ44098		SCOPUS	MIT S	2022-23
24	M. Bommy	Assistant Professor	Hybrid TABU search with SDS based feature selection for lung cancer prediction	International Journal of Intelligent Networks	4 October 2022	3	-	https://doi.org/10.1016/j.ijin.2022.09.002	2666-6030	SCOPUS	MIT S	2022-23
25	K Hazeer Shabbeer Basha	Assistant Professor	Mental Health Prediction of Employees at Work Place using Machine Learning	International Journal of All Research Education and Scientific Methods(IJARES)	6th, May & 2023	11	5	http://www.ijares.com/mental-health-prediction-of-employees-at-the-workplace-using-machine-learning	2455-6211	UGC-Care	MIT S	2022-23
26	Mr. G. Sreenivasulu	Assistant Professor	Prediction and investigation of diabetic retinopathy using ensemble classification in deep learning techniques	NOVYI MIR Research Journal	March 2023	8	3	DOI: 16 10098 NMRJ	ISSN NO: 0130-7673	UGC-Care	MIT S	2022-23
27	Mr. G. Sreenivasulu	Assistant Professor	URINARY BIOMARKERS FOR PANCREATIC CANCER PREDICTION USING RANDOM FOREST ALGORITHM	NOVYI MIR Research Journal	April 2023	8	4	DOI: 16 10098 NMRJ	ISSN NO: 0130-7673	UGC-Care	MIT S	2022-23

28	Mrs G B Renuka	Assistant Professor	CHATBOT Based On emotions using Deep Learning	Bulletin for Technology and history Journal	Dec-April 2023	Volume 23	Issue 5	DOI.10.37326/bthnlv2.2.1/1229	0391-6715	Scopus active and UGC Care Group-2 journal	MITs	2022-23
29	Mr. G. Sreenivasulu	Assistant Professor	A Deep Learning-based Methodology for Predicting Monkey Pox from Skin Sores	2022 IEEE 2nd Mysore Sub Section International Conference	October 2022	408	2	10.1109/MysuruCon55714.2022.9972746	2244-3817	Scopus	MITs	2022-23
30	Galeebathullah.B	Assistant Professor	MULTIPLE SERVICE AUTHENTICATIONS WITH CLOUD OTP AS A SERVICE	JOURNAL OF PHARMACEUTICAL NEGATIVE RESULTS	19.9.2022	Volume No 13	01	https://doi.org/10.47750/pnr.2022.13.S01.109	Print -0976-9234, Online -2229-7723	Scopus	MITs	2022-23
31	Dr. R.Sundar	Assistant Professor	MULTIPLE SERVICE AUTHENTICATIONS WITH CLOUD OTP AS A SERVICE	JOURNAL OF PHARMACEUTICAL NEGATIVE RESULTS	19.9.2022	Volume No 13	01	https://doi.org/10.47750/pnr.2022.13.S01.109	Print -0976-9234, Online -2229-7723	Scopus	MITs	2022-23
32	Dr. K. Sudhakar	Senior Assistant Professor	A Multi-Stage Faster RCNN-Based iSPLInception for Skin Disease Classification Using Novel Optimization	Journal of Digital Imaging	6/15/2023	0	01	1618-727X	https://doi.org/10.1007/s10278-023-00848-3	SCI	MITs	2022-23
33	Dr. K. Sudhakar	Senior Assistant Professor	Perceptual Video Summarization Using Keyframes Extraction Technique	IEEE Xplore	April 2023	NA	NA	DOI: 10.1109/ICIPTM57143.2023.10118236	Electronic ISBN:979-8-3503-3623-8	Scopus	MITs	2022-23
34	Dr. K. Sudhakar	Senior Assistant Professor	An IOT - Based System for Fault Detection And Diagnosis in Solar PV Panels	E3S Web of Conferences	April 2023	Volume 387	1	https://doi.org/10.1051/e3sconf/202338705009	eISSN: 2267-1242	Scopus	MITs	2022-23
35	Mrs V Nirupa	Assistant Professor	Leaky-Integrate-and Fire Neuron as Pacemaker for interval timing	IEEE Explore	23-May-23	NA	NA	https://doi.org/10.1109/DELCON57910.2023.10127242	Electronic ISBN:979-8-3503-3623-8	Scopus	MITs	2022-23
36	Komala A	Assistant Professor	Leaky-Integrate-and-Fire Neuron as Pacemaker for Interval Timing	IEEE Xplore	23-May-23	NA	NA	https://doi.org/10.1109/DELCON57910.2023.10127242	Electronic ISBN:979-8-3503-3623-8	Scopus	MITs	2022-23


Faculty Incharge





AI-enhanced Metric Package for Assessing Reliability in Service Composition for Drug Discovery and Development

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Objectives

Artificial intelligence (AI) has become more prevalent in many spheres of life, but especially in the pharmaceutical business. In the pharmaceutical sector, service composition is a key component for combining various services into a single service. We conducted how AI is being used in several areas of the pharmaceutical sector, such as clinical trials, drug repurposing, drug discovery, and development. This service increases in complexity and decreases human workload while also accomplishing targets quickly and leaving workers unable to finish their tasks if any errors happened during execution. Reliability is a key factor in successfully ensuring each service and handling this failure. We have determined from the many study studies that these aspects have not been fully measured. Our goal is to suggest a collection of metrics for gauging reliability in service composition. Their element has been recognized, described by a taxonomy, and measurements have been developed for each feature. In order to recover from failure, experiments are designed and the replication decision model, an existing recovery decision model, is also utilized. Colored Petri Net (CPN) is used to evaluate the metrics, and the related simulation results are also provided.

Keywords: Colored Petri Net (CPN), artificial intelligence, service-oriented architecture, service composition, metric suite, reliability aspects, and replication model.

Introduction

The pharmaceutical industry has dramatically increased its data digitization during the last few years. Yet, this digitalization comes with the task of gathering, evaluating, and applying that knowledge to solve complicated clinical problems [21]. Because AI can handle massive amounts of data with improved automation, this encourages its usage [22]. Technology-based artificial intelligence (AI) systems can replicate human intelligence by using a variety of cutting-edge tools and networks. Nonetheless, it does not totally threaten to replace human physical presence (23, 24). Service Composition [1, 2, 3, 4, 5] is a significant quality to integrate services into a single service when AI uses the service-oriented environment. Those, Services come in two varieties: atomic and composite [6]. Atomic services are those that do not invoke other services, whereas composite services do so and dependencies between them develop. In this essay, we look at composite services for efficiently composing services. There are three ways to create it: static, dynamic, and semi-automatic [5, 6].

Research Article

Lung Cancer Classification and Prediction Using Machine Learning and Image Processing

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Lung cancer is a potentially lethal illness. Cancer detection continues to be a challenge for medical professionals. The true cause of cancer and its complete treatment have still not been discovered. Cancer that is caught early enough can be treated. Image processing methods such as noise reduction, feature extraction, identification of damaged regions, and maybe a comparison with data on the medical history of lung cancer are used to locate portions of the lung that have been impacted by cancer. This research shows an accurate classification and prediction of lung cancer using technology that is enabled by machine learning and image processing. To begin, photos need to be gathered. In the experimental investigation, 83 CT scans from 70 distinct patients were utilized as the dataset. The geometric mean filter is used during picture preprocessing. As a consequence, image quality is enhanced. The K-means technique is then used to segment the images. The part of the image may be found using this segmentation. Then, classification methods using machine learning are used. For the classification, ANN, KNN, and RF are some of the machine learning techniques that were used. It is found that the ANN model is producing more accurate results for predicting lung cancer.

1. Introduction

One of the most lethal types of the disease, lung cancer, is responsible for the passing away of about one million people every year. The current state of affairs in the world of medicine makes it absolutely essential to perform lung nodule identification on chest CT scans. This is due to the fact that lung nodules are becoming increasingly common. As a direct result of this, the deployment of CAD systems is required in order to accomplish the objective of early lung cancer identification [1].

When doing a CT scan, sophisticated X-ray equipment is utilized in order to capture images of the human body from a number of different angles. Following this, the images are fed into a computer, which processes them in such a way as to produce a cross-sectional view of the internal organs and tissues of the body [2].

A CAD approach was trained and assessed in two separate experiments. One research used a computer simulation using ground truth that was generated by computers. In this work, the cardiac-torso (XCAT) digital phantom was used to replicate 300 CT scans. The second research made use of



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Abstract

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Abstract:

Skin Cancer is one of the most common cancer forms in many countries, it is considered to be one of the dangerous types in the sense that it is lethal and its occurrence over time has been dramatically high. It is one of the deadliest cancers among all diseases and has a large rate of mortality. The efficiency of the earlier approaches to assess one of the most hazardous melanoma diagnosis in dermoscopic criteria are not up to the mark. Therefore, in this research, the work has been carried out in three stages in order to detect melanoma in an efficient manner. In the first stage, prior to the implementation of the image segmentation technique, noise elimination and pre-processing steps are carried out to remove the noise and to achieve better execution results. This segmentation model focuses on the separation of the interesting portions from the background and collects the necessary information from the neighboring pixels of the same category. Gaussian analytical patterns are used to handle the heterogeneous regions/sections of dermoscopy images whose mean and variance can be dynamic. In addition, the third stage of work is based on the texture classification, which is proposed as the CSTC-Mel Identification Model.

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4



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A secured and optimized deep recurrent neural network (DRNN) scheme for remote health monitoring system with edge computing

D. Pavithra, R. Nidhya, S. Shanthi & P. Priya

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INTERPRETATION OF VEGETATION USING AI IN QGIS (QUANTUM GEOGRAPHIC INFORMATION SYSTEM)

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Abstract: Vegetation is a collection of plant species that includes trees, shrubs, grasses, and forbs, among others. Vegetation is dwindling these days owing to a variety of circumstances. The primary goal is to identify vegetative areas and protect them from being destroyed. Vegetation mapping is critical in many applications. Traditional classification algorithms are still difficult to apply to derive correct vegetation covers from aerial data because vegetation categories have complex spatial structures and similar spectral features. To overcome this issue, we can use In a QGIS (Quantum Geographic Information System), the methodology is based on the raster calculator band. Furthermore, we create an AI-based solution in QGIS as well as a dataset for recognising vegetation. The effectiveness of using artificial intelligence and the chopped picture method for computer-based vegetation detection from satellite photos was explored in this study. The satellite images are used to identify the vegetation with the help of Artificial intelligence in QGIS.

Keywords: Satellite images, Semi Automatic Classification Plugin (SCP), DZETSAKA-Classification tool, Normalized Difference Vegetation Index (NDVI)

1. INTRODUCTION

In environmental science research and natural resource management, mapping vegetation is a must. Because of its capacity to differentiate vast scales of land cover types, remote sensing data has been widely used for vegetation mapping in a variety of situations [8]. Satellite imagery has been used to interpret vegetation for specific regions. However, traditional methods (e.g., field surveys, manual interpretation) are ineffective for obtaining vegetation data since they are labour-intensive and often costly. Remote sensing technology provides a practical and cost-effective way to collect data on vegetation cover, particularly over wide areas. Remote sensing has the potential to provide high temporal resolution classification and mapping of vegetation due to its capacity to make systematic observations at multiple scales [8].

One of the most crucial steps in practically all computer vision issues, including remote sensing, is the detection of distinguishing visual features. Because traditional approaches such as support vector machines necessitate hand-designed, time-consuming feature extraction, significant effort has gone into developing methods for automating feature extraction [2]. Because this new method does not require the human extraction of characteristics, artificial intelligence has recently become a new solution for picture recognition and categorization [5]. The process of interpreting geographic and geology data for resource evaluation can be time-consuming, inefficient, and non-reproducible [1].

2. GIS DESCRIPTION

GIS is open-source software that has been growing, and the development of sharing an open-source applications in the environmental areas that have some significant benefits, namely the free distribution and the public availability of code, allowing users customization [1]. The Free and Open-Source Software (FOSS) for GIS application that has several advantages, Where the new applications can be developed under them by using open-source programming languages, such as Python and different



Analyzing and Detecting the Boundary in Medical Images and Utilizing Big Data

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ABSTRACT

The medical images in the form of big data are used to analyze and retrieve more useful information. Detecting and analyzing the correct boundary in noisy images is a difficult task in medical images. It is very important to analyze and predict the image for identifying the symptoms. Various kinds of medical images can be used with this technique. Our proposed technique can detect the boundaries of objects in noisy images using the information provided via the edge map. The performance of the new proposed technique has been tested to segment objects in synthetic noisy medical images including left ventricles in cardiac magnetic resonance images, aortas in cardiovascular magnetic resonance images, and knee joints in computerized tomography images. Our proposed technique works well on medical images and provide better results than the existing methods. The planned methodology is powerful and applicable on numerous varieties of screeching pictures. The above segmented images can be stored in the form of big data, retrieved and analyzed in the future for predicting the similar symptoms. Storing the information in big data will be helpful for the experts for saving the large amount of data about the different persons. It can be remotely accessed anywhere by experts for having the suggestions or reference regarding the same. The data stored will give meaningful and useful information for better analysis operation. With a powerful integration of analysis and tending knowledge, trendy tending organizations will probably revolutionize the medical fields and personalized medication.

Keywords: Boundary detection, Medical imaging, Bigdata.

INTRODUCTION

Medical imaging is a technique and a process used to visualise the function of particular organs or tissues as well as the interior of a person for clinical analysis and medical intervention. Medical imaging aims to identify and cure disease as well as disclose internal structures that are covered by the skin and bones. In order to detect anomalies, medical imaging also creates a database of typical anatomy and physiology.

Image analysis includes breaking down an image into its basic elements in order to retrieve valuable information. Finding shapes, spotting edges, eliminating noise, counting objects, and generating statistics for texture analysis or image quality are some examples of the tasks that can be included in image analysis.

The issue of boundary detection is significant in computer vision. It is different from edge detection, which determines where an image's light and dark pixels meet. Instead, boundary detection identifies the semantic lines separating what are perceived by humans as distinct items or areas of the image. It is important to analyse the medical scan images to identify deeply.

Edge Discovery is a veritably important point- birth system that has been extensively used in numerous computer vision and image processing operations. The introductory idea of utmost available edge sensors is to detect some original object- boundary information in an image by thresholding and skeletonizing the pixel- intensity variation chart. Edge- discovery evaluation styles can be distributed in several ways. First, they can be classified as private and objective styles. The former uses the human visual observation and decision to estimate the performance of edge discovery [1].



Lung Cancer Prediction Using Machine Learning Technique Over Big Data

T. Thangarasan^{1*}, R. Keerthana², M. Arunkumar³, S. Ramya⁴,
M. Bommy⁵, V. Surendhiran⁶

Abstract

In current position, cancer disease is substantial menace to human life globally. 32 percent of people worldwide are affected by various types of cancer. But lung cancer depicts the highest ratio. Nowadays peoples are not having awareness about to detect the cancer in early stage. The survival rate of five year for lung cancer disease is 55 percent of the cases are affected most. However, only 14 percent of lung tumor cases are diagnosed at an early stage. For slight tumors the five-year survival rate is simply 3 percent. There are 4 stages in lung cancer. If we predict the disease in I and II stage, it is easy to cure by effortless operations. If it exceeds second stage, it may not be cured. So, diagnosing the cancer in earlier stage is the best solution to predict the patients from death. For that, the system uses the Decision Tree and K-Nearest Neighbor (KNN) Algorithms as preferred classification model. By using these algorithms, it becomes easier to diagnose the cancer in early stage. So, the survival rate of lung cancer patients becomes higher. The propound system analyze, calculate and compares the precision of Random forest, Naive Bayes and KNN and the preliminary result reveals that ID3 furnish better precision for cancer dataset. The input has been accessed only in numeric format. The algorithms also maintain key stuffs of the dataset, which are predominant for extracting performance, and so it may warrant the correct defense and effective preservation. This leads to protection of any extracting works that depends on the sequence of distances between objects, such as Random forest, Naive Bayes -search and classification, as well as many visualization techniques. In particular, it establishes a restricted isometric property, that is the tight leap on the shrinkage and enlargement of the original distances.

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Key Words: Lung cancer, Decision Tree, KNN, ID3, Naive Bayes

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Introduction

Big data is a term which is used to manage and analyze the large quantity of data which is not able to deal by the traditional software systems. Every day there is billions of data are generated from various factors such as e-commerce websites, social media, hospitals etc. Big data plays an important role

to analyze these data with more effectiveness and provides the best result. Big data techniques are used to work with the effective performance of surgery strategies, other medical tests, and also to discover the relationships among very rushed medical, clinical and diagnosis data. In the field of health sector, the facility for doctors had introduced various data chassis with an enormous amount of

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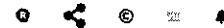
Modified Imperialist Competitive Algorithm (MICA) For Smart Heart Disease Prediction in IoT System

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Abstract:

For the detection and prognosis of heart disease, Internet of Medical Things (IoMT) technology has recently been implemented in healthcare systems. The intended study's main objective is to foresee heart illness using medical data and imaging to classify data. Preprocessing is done on the input dataset to deal with missing values and incorrect data. IoT devices analyse the data they receive from patients, physicians, or nurses using the Modified Imperialist Competitive Algorithm (MICA). The IoT device's analysis of the data allows for effective and informed judgements to be made by humans, robots, and even other IoT devices. A modified imperialist competitive algorithm is suggested in this research in order to pinpoint the essential characteristics of heart disease. The Modified Imperialist Competitive Algorithm is used to select features for the diagnosis of heart disease (MICA). The improved self-adaptive Bayesian algorithm (ISABA) technique is then used to classify the chosen features into normal and abnormal states. For detecting normal sensor data and abnormal sensor data, respectively, the ISABA approach achieved accuracy of 96.85% and 98.31%. With a 96.32% specificity and a 99.15% maximum accuracy in categorizing images, the proposed model outperformed the competition

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Discover Customer's Gender based on Online Shopping Behavior Using Machine Learning

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Abstract:

The online store's recommendation engine heavily relies on gender information. But consumers' reluctance to voluntarily divulge personal information creates labelling issues for gender data, which results in gender estimation findings that fall short of the requirements of the product recommendation system. The dataset provided by Vietnam FPT Group allows us to examine the customers' online buying behavior, particularly the items viewed throughout the shopping session, to determine the gender information. More female samples than male samples make up the dataset, which is very unbalanced. We divide the female samples into three subsets and train a two-layer classifier model to infer the gender of the clients to overcome the imbalance issue. There are several DSG (Discover Customers Gender) systems available today. These existing systems are based on various methodologies, but still, it is a challenging task as some of the factors like product ID, category ID, category name, and different brands can affect a lot of the overall prediction rate. Most of the systems work under these limitations.

Keywords : Machine learning, Customer Privacy, Product Recommendation, two-layer classifier



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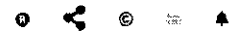
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Abstract: Energy efficiency is the largest critical provocation in the wireless sensor network. Communicationenergy is the ultimate consuming work in sensor junctions, especially in the great distance. Thus, clustered routing modelsaresystematicapproachesutilizedfor lowering the communication energy and expanding the lifespan of the networkwhichis the objective of this paper. This work proposes a hybrid clustered routingmodel for energyexpansion in WSN. Several clustering designs examine the residual power and distance in the middle of the junctions in the cluster heads selection and further rotate the cluster heads selection periodically. The proposed clustering design, K-Means, and LEACH protocol techniques are applied. The clustering planpermitsforreducing intra-cluster transmissions and to gain powerability for sensor junctions. The hybrid integration of K-means and Leach protocol is used toimprove the nodes' power and the network lifespan.

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Super Artificial Intelligence Medical Healthcare Services And Smart Wearable System Based on IoT For Remote Health Monitoring

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Abstract—Internet of Things (IoT), which is an abstract concept, has significantly changed the way we live. IoT use in healthcare became extremely popular as a result. This might be achieved by keeping an eye on a few of the crucial health indicators that reveal information about the state of health. These vital markers include pulse rate, body temperature, blood pressure, and blood oxygen saturation. Additionally, noticing bodily motions helps to identify numerous risks, including falls and injuries. The design requirements for such a device are portability, lightweight, and ease of use because it is intended for everyday health monitoring. Data collection and pre-processing sensor readings using an integrated CPU are the first two stages of the system's construction. Employing a common cloud platform, feature extraction and implementation in additional recognition algorithms, data display of all vital signs, and callouts in case of emergency.

Keywords—Health monitoring, Telemedicine, Internet of Things, Wearable technology

I. INTRODUCTION

Recent years have seen a significant increase in telemedicine and healthcare-related research, with a concentration on healthcare monitoring systems in particular. In fact, technology has played a significant role in meeting this demand by introducing the concept of monitoring important health indicators, which makes it possible to treat patients remotely. Additionally, keeping track of a person's health state allows for the best course of action due to health updates that drastically lower death rates. The monitoring would be more effective with personalized medical data since they provide a better insight of health condition. This desire has been the subject of extensive investigation and hard labour for a long time. In this essay, we will begin by reviewing some of the most recent and pertinent research to our suggested health monitoring method. We offer a number of designs for smart wearable systems for remote health monitoring in this study. A mobile-care unit, communication network, and a medical server that received the information gathered by the first unit made up the first system. In reality, a mobile-care unit gathers vital sign readings using sensors, and the information is either relayed to a server upon request or

examined for any abnormalities [1].The second device, which combined an electrocardiogram (ECG) sensor and a photoplethysmography (PPG) sensor as a first step, was more specifically designed for chronic conditions. The signal obtained was then filtered, and any anomalies were then detected.

Abnormalities other than using MATLAB to calculate heart rate Using local monitoring software, the doctor's smart phone is connected to the data collection. The GSM/GRPS communication module receives data from the processing unit, an Arduino UNO board, which digitises the information and transmits it [2].A Raspberry Pi served as the processing unit for the third system under consideration. The suggested method is reliant on measuring heart rate and body temperature. Additionally, it contains a graphical user interface (GUI) that gathers crucial data regarding the patient's medicine.Fitbit is used to collect heart rate data, indicating how large and dependent this system is on external systems [3].

The fourth one makes use of an Arduino Uno's processor unit with a Wi-Fi module. The system uses an ECG and a temperature sensor, and a liquid crystal display shows the readings that are gathered (LCD).If the collected data exceeded a predetermined sensor value threshold, it was then uploaded to a database server that displayed it on a website [4].The fifth system began by utilizing pre-existing systems and focused on how they interacted with one another and data collection specifically. The suggested system is based on a smart watch that uses an ECG, temperature sensor, impedance sensor, and motion sensor to gather vital data. The mobile phone acts as a bridge between the smart watch and the cloud for the uploading of acquired data. The data is then sent to Thing Speak, an IoT cloud platform that does the required data visualization. The final step would be for an online service provider (IFTTT) to develop a straightforward conditional statement. For the aim of triggering, Thing Speak was connected with it.[5]

A Raspberry Pi 3B+ serves as the key component of the sixth and most recent system. This system is based on the integration of the Healthy 3 Hat and the central unit. Using an ECG sensor, pulse oximeter sensor, and body temperature sensor, it aids in the monitoring of vital signs.

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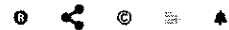
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Abstract:

Medical engineering research has recently advanced significantly. The ability to accurately record a significant amount of medical data has increased because to advancements in measuring device technology, which has caused medical data to rise rapidly. A significant amount of data has been encountered and it is crucial to use this enormous amount of data sensibly. By using an Artificial Intelligence (AI) based reasoning engine to scan medical data, it is possible to compile user-generated keywords and instantly suggest relevant content to users. The decision tree algorithm is emphasized as one of the main technologies to implement data mining in this research, and it also explores how data mining technology is used in clinical medical diagnosis mining and analysis.

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Digital Image Anti-Forensic Model Using Exponential Chaotic Biogeography-Based Optimization Algorithm

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The innovation in visual imagery has led to massive growth in technologies, wherein digital cameras are obtainable at affordable prices. Thus, the digital images are easily captured and processed due to the internet connectivity. On the other hand, the development of strong image editing software facilitated the forgers to manipulate the accessible images with different tampering operations. Several techniques are devised for detecting the forgeries. Accordingly, this paper devises an anti-forensic model, namely Exponentially Weighted Moving Average-Chaotic Biography Based Optimization (E-CBBO) for joint photographic experts group (JPEG) compression to mitigate the forgeries occurred on the internet while transmitting data. The proposed E-CBBO is designed by integrating the properties of the exponentially weighted moving average (EWMA) with the chaotic biography-based optimization (CBBO). The suggested JPEG anti-forensic model is used to eliminate JPEG compression artifacts through the use of unique deblocking, smoothing with dither and decalibration operations. In addition, the goal is to balance visual quality and forensic undetectability when compressing the JPEG image. The fitness function is developed using the structural similarity index (SSIM), universal image quality index (UIQI) and histogram deviation parameters. With a maximum accuracy of 93.2%, a minimal MSE of 0.110, a maximum SSIM of 0.932 and a maximum UIQI of 0.890, the suggested E-CBBO beat existing approaches.

Keywords: JPEG compression; digital images; anti-forensics; support vector machine (SVM); artefact removal

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1. INTRODUCTION

Images act as an effectual and natural communication media for humans [1–4], due to their closeness and the simple manner to recognize the image content. With the brisk dispersion of low-priced and uncomplicated devices, everyone has the opportunity of recording, storing and sharing a large amount of digital images. In addition, the huge availability of image editing software tools change the image content, or generate new images. Hence, the opportunity of counterfeiting and tampering the visual content is no more limited to experts. Many researchers have proposed different computer-based forensic algorithms for detecting the digital forgeries even when they are convinced visually [5, 6]. Also, different methods are in practice to perform other important tasks like tracing a history

of image's processing or finding the device used for capturing an image.

JPEG compression is one of the most widely used formats for image compression in modern times. The existing work shows that an origin of image can be found by comparing the quantization tables used during JPEG compression to a database of those used by a particular digital camera models and image editing software [7]. If an image editor is matched with the quantization table, then the image authenticity can be questioned. The JPEG compression [8] detects the image even it saved in an uncompressed format later and the table used for quantization during compression [9] can be found from the earlier compressed image directly [10]. By using a different quantization table, JPEG compression [11] followed

The Role of Knowledge Management in Hr Activities Within Organization

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ABSTRACT

The process of creating, storing, distributing, and utilising knowledge to enhance corporate performance is known as knowledge management. Also, it is the procedure through which knowledge is disseminated across the workforce of the company and new skills are developed, enhanced, and abilities strengthened. The study focuses to learn about the organization efficiency through knowledge management system. A non-experimental survey approach, and in-depth interviews were conducted to accumulate information. Vishakhapatnam was one of the IT hub area in Andhra Pradesh. More than 200 companies are IT companies commences their business and it is fair to conduct the research in Visakhapatnam. Eight companies with minimum two hundred employees had been selected to conduct the survey. The companies selected were 1)Tekwissen 2)Miracle Software Systems 3)Mahati Software Pvt Ltd 4)Conduent 5)Fluent grid 6)Media3 7)Inspire edge software solutions 8)E-centric software solutions. The questionnaire was shared to 310 employees and 302 datas were considered as authenticated. The study also identifies the degree of cultural alignment of the IT companies in Visakhapatnam. We found that most companies maintain a culture of openness, fairness and transparency. It's starting point of knowledge sharing culture inside the organization. A closed culture does not encourage the practice of knowledge sharing within the company. The results of this survey suggest that organizations do not consider the aspect of knowledge sharing and creation while conducting selection process. Organizations should keep a criteria to access the willingness of employee in knowledge creation and knowledge sharing. The specific knowledge-sharing behaviors of the employees can be identified from previous work experience. The survey found that the majority of the employees are willing to share information with their organization if there is an associated financial reward. Most employees are looking for financial gain, and organizations need it in order to implement good knowledge management and improve efficiency. The employees should poses the attitude of searching for new knowledge and reliable information at work, share the vision of seeing their company succeed. Not all employees share this common vision. It's important to select employees who make a difference at work and inspire others to think again.

Keywords: Knowledge Management, Knowledge sharing, Knowledge accumulation, Knowledge creation, Knowledge management system

INTRODUCTION

What is Knowledge Management?

The process of creating, storing, distributing, and utilising knowledge to enhance corporate performance is known as knowledge management. Also, it is the procedure through which knowledge is disseminated across the workforce of the company and new skills are developed, enhanced, and abilities strengthened.

It is the idea of gathering, organising, disseminating, and assessing one's knowledge at all functional levels about the tools, materials, and abilities of people. Early in 1998, it was believed that very few businesses employed knowledge management techniques. Nowadays, firms have a framework for managing knowledge thanks to technology advancements. Modern knowledge management is impacted by evolving trends in the evaluation and dissemination of information.

Organizational objectives such B. Performance Improvement, Industry, Competitive Advantage, Innovation and Technology, Development Process, Communication, and General Development are linked to knowledge management initiatives. Land organisation, continuous improvement, and lifelong learning are three concepts that are frequently linked to KM.

Engaging in knowledge management activities

- 1) Creation of new information
- 2) Get knowledge from enduring sources.
- 3) Using knowledge to make decisions;
- 4) using knowledge to the production and service of goods;
- 5) keeping knowledge in software, databases, and papers;

15

HUMAN ACTIVITY RECOGNITION USING LOGISTIC REGRESSION ALONG WITH MACHINE LEARNING ALGORITHMS

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Abstract - Human Activity Recognition is mainly about classifying the data obtained into meaningful movements. From the last few decades, Human Activity Recognition became a great research topic. Human Activity Recognition major purpose is to build a model which analyzes the human activities and then we developed a human activity classification model that recognizes human activities using video preprocessing, human motion detection, feature extraction and will classify the activities. We mainly classify the six routine activities such as walking, walking_upstairs, walking_downstairs, sitting, standing, laying by using data obtained from sensors (accelerometer and gyroscope) and activities like playing music, playing sports and workouts by using the video-based input. We are applying different machine learning algorithms as Support Vector Machine, Naïve Bayes, Random Forest, logistic regression algorithms to compare the performances and to get better model for the sensor data. In the video-based recognition we are classifying the each video into percentages of each activities by taking video as input using the Convolutional Neural Network with Gated Recurrent Unit.

Keywords – Convolutional Neural Network, Gated Recurrent Unit, Logistic Regression, Naïve Bayes, Random Forest, Support Vector Machine

1. Introduction

Human beings by monitoring someone's daily behaviours can learn about that person's personality, the activities they are doing, the time spending on those activities and the psychological state. Following this pattern, researchers are actively researching on Activity Recognition (HAR), which aims to anticipate the human behaviour using technology. Currently, it became one of the crucial

areas for research in computer vision and in the machine learning.

Human Activity Recognition is mainly of two types. One is video/live capture based and second is sensor based. In the video-based model is trained using the videos and the prediction is done by giving the video as input or can be live detection. In the sensor based the data collected from the various sensors is used.

Now-a-days every people have a smart phone that is embedded with various sensors. So, through the smartphones, smart home sensors, smart watches, cameras, video capturing it is not a big task to collect the sensor/video data. Many Machine Learning algorithms aids to analyze the huge dataset within a minute.

HAR plays important role in remotely monitoring physical and mental health. Mainly children and the elderly people are one require more attention. In the present days on a busy schedule, it will be difficult to monitor them all the times. Now, Human Activity Recognition can anticipate their behaviour if they need any emergency medical assistance by using post-processing and through the video surveillance, will may notify to the appropriate authorities. It has many applications on sports by fitness monitoring and tracking activities like running, walking. By implementing the HAR in the security cameras can be used to monitor any suspicious or violent activities in many public places like hospitals, airports, railway stations, schools etc. So, prediction of the human activities takes the major place.

In this paper we collected data from the Kaggle and videos from different websites and gathered and given as dataset to our models. We applied different ML algorithms as SVM, LR, NB,

Lung Cancer Classification Using SVM And CNN Models

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Abstract— Lung cancer is one of the most common and deadly diseases globally. Early diagnosis and classification of lung cancer can significantly improve the chances of successful treatment. In this project, we explored the use of machine learning models, specifically Support Vector Machines (SVM) and Convolutional Neural Networks (CNN), for the classification of lung cancer using histopathological images. We employed ResNet, VGG19, DenseNet, and SqueezeNet CNN architectures for feature extraction and classification. We trained SVM and CNN models on the preprocessed dataset and evaluated their performance using various metrics, including accuracy, precision, recall, and F1 score. Our results showed that CNN models outperformed SVM, with an average accuracy of 98.9%, compared to 82.7% for SVM. Among the CNN models, DenseNet achieved the highest accuracy of 99.12%. In conclusion, this project highlights the potential of SVM and CNN models in lung cancer classification using histopathological images. We believe that this work can pave the way for future research on the use of machine learning in medical image analysis and assist healthcare professionals in making more accurate and timely diagnoses.

Keywords— SVM, CNN models, VGG19, DenseNet, ResNet 152, SqueezeNet1_1, confusion matrix, heatmap, adenocarcinoma, squamous cell carcinoma, and large-cell carcinoma.

I. INTRODUCTION

Lung cancer is a leading cause of cancer-related deaths worldwide. Early detection and accurate diagnosis of lung cancer can significantly improve patient outcomes. Medical imaging, such as CT scans, are commonly used to aid in the diagnosis and staging of lung cancer. Computed tomography (CT) scans are commonly used for lung cancer diagnosis, and machine learning algorithms can aid in the accurate and efficient classification of lung cancer based on CT scan

images. However, there is a need to compare and evaluate the performance of different algorithms for lung cancer classification, specifically for normal lung tissue and three stages of lung cancer - adenocarcinoma, large-cell carcinoma, and squamous cell carcinoma. The objective of this project is

to develop and evaluate a lung cancer classification system using CT scan images dataset, with folders including normal lung tissue and three stages of cancer (adenocarcinoma, large-cell carcinoma, and squamous cell carcinoma). The project aims to compare the performance of CNN models, a deep learning algorithm, with SVM, a traditional machine learning algorithm, in terms of accuracy, sensitivity, specificity, and F1 score for lung cancer classification, with the goal of aiding in early detection and improving patient outcomes.

Several studies have been conducted on the use of SVM and CNN models for the classification of lung cancer based on CT scan images. One study by Dou et al. (2016) used a CNN model to classify lung nodules as malignant or benign based on CT images. The results showed that the CNN model achieved a high accuracy of 90.4% in the classification task. Another study by Wang et al. (2018) used a hybrid CNN-SVM model to classify lung nodules as malignant or benign. The results showed that the hybrid model achieved a high accuracy of 91.4% in the classification task.

II. EXISTING SYSTEM

Existing studies on lung cancer classification using SVM and CNN models with CT scan images have shown promising results. One study used SVM and VGG16 models to classify lung nodules into malignant and benign categories based on CT scan images. The SVM model achieved an accuracy of 86.8%, while the VGG16 model achieved an accuracy of 90.9% (Wang et al., 2019). Another study used a 3D CNN model to classify lung nodules as malignant or benign based on CT scan images, achieving an accuracy of 92.31% (Luo et al., 2019).



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Electric Vehicle Charging Load Forecasting and Scheduling using DL

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ABSTRACT

Electric Vehicle (EV) charging infrastructure is becoming increasingly important as the number of EVs on the roads continues to grow. In this thesis, we propose a forecasting and scheduling model for EV charging loads, which incorporates a dynamic pricing policy to optimize the use of the available charging infrastructure. The model utilizes Convolutional Neural Network (CNN) and Recurrent Neural Network (RNN) algorithms to predict EV charging demand, based on data gathered from various sources and regulate the patterns of EV usage. The dynamic pricing policy aims to incentivize EV owners to charge their vehicles during off-peak hours, when the electricity demand is low, by offering lower prices. The proposed model will contribute to the efficient management of the EV charging infrastructure, reduce the burden on the power grid, and promote the widespread adoption of EVs. The significance of CNN and RNN algorithms lies in their ability to analyze large and complex datasets and make accurate predictions based on past patterns.

Keywords:- EV, RNN's, CNN's, Dynamic Pricing, Load Forecasting, EV's Charging time scheduling.

INTRODUCTION

A. Intervention of EV'S into existing power system

Since the second industrial revolution, the steady supply of electricity load is a basic requirement for maintaining the normal functioning of modern society. Load forecasting can be divided into three categories on the basis time interval, long-term load forecast (1 year to 10years ahead), medium-term load forecast (1 month to 1 year ahead), and short-term load forecast (1 hour to 1 day or 1 week ahead). In recent years, the wide adoption of renewable energy has become an emerging pathway due to the shortage of fossil fuel such as petroleum, and the global warming due to the excessive carbon emissions. One of the effective ways to solve the problem of fossil fuel shortage and environmental pollution is to popularize the electric vehicles (EVs) to replace traditional internal combustion engine (ICE) based vehicles. Evs are powered by electricity, which greatly reduces the consumption of petroleum resources and does not generate any environmentally polluting gases during the whole life cycles. With the fast development of the EV industry, it is bound to bring new changes to the power field due to the large capacity of the battery and stochastic charging behaviours of the users. In this regard, accurate short-term load forecasting is a key measure to the intelligent control of EV charging systems.

IoT based Mobile App for Skin Cancer Detection using Transfer Learning

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Abstract— Skin cancer is a significant health concern, approximately 125,000 fresh melanoma issues diagnosed each year. As a kind of cancer, skin cancer is extremely hazardous. Variations in the skin's genetic material, generated by damaged and not repaired deoxyribonucleic acid (DNA), are the leading cause of skin cancer. Early detection is key since skin cancer has a tendency to migrate (transfer to other portions of the body over time) and is therefore less treatable in later stages. Dermatoscopy, clinical assessment, and other visual approaches were among the first used in the identification of skin lesions. It has been observed that the diagnosis accuracy of skin lesions can be negatively affected by the presence of novice physicians. The death rate from skin cancer can be reduced if it is detected early. Earlier research has shown that Deep Learning outperforms human specialists on a wide range of vision-based tasks. In this study, an IoT-based smartphone app is developed in collaboration with DL to enable the automatic identification of skin cancer. Transfer Learning DL models, including VGG-16 and AlexNet, are built with the HAM10K data. Techniques like reshaping and augmenting the data are used to eliminate the data imbalance. When comparing the two DL models for cancer prediction, the metrics show that AlexNet performs better. Finally, the AlexNet model is deployed in the development of the smartphone app, bringing the results of this study into the hands of the general public.

Keywords— Skin, Cancer, Transfer Learning, Data, Deep Learning, Accuracy, Loss.

I. INTRODUCTION

Skin cancer is a major and widespread health issue [1]. In the United States alone, an estimated 5.4 million new cases of skin cancer are reported each year [2]. The decade-long trend of this disease's increasing mortality rate is expected to continue. When caught late, the survival rate reduces to less than 14% [3]. Nonetheless, if skin cancer is detected early, approximately 97% of individuals will recover completely. As a result, skin cancer screenings must begin sooner. It has been discovered [4-5] that a competent dermatologist typically follows a series of procedures, beginning with a naked eye assessment of worrisome lesions, moving on to dermatoscopy (microscopically magnifying lesions), and finally terminating with biopsy. That would take too long, and the patient might be in a more advanced

stage by then. Furthermore, diagnosis accuracy is dependent on the doctor's knowledge. Even the most expert dermatologists can only correctly diagnose 80% of skin malignancies, according to research [6]. The scarcity of skilled dermatologists in the world's public healthcare systems exacerbates these issues. Computer image analysis techniques have been the subject of intensive study to assist in the early identification of skin cancer and to alleviate a few of the aforementioned obstacles. Many of these simulation results were parametric, indicating that uniformly distributed data was necessary. These techniques will be inadequate for an accurate diagnosis due to the uncontrollable characteristics of the data. However, non-parametric methods do not assume that the data should follow a normal distribution. In this study, we apply DL to provide dermatologists with additional assistance. The method is based on teaching a computer to recognize skin cancer through the examination of digital images. The ability to construct and deploy the computer model on a mobile app is what distinguishes this session. This model has been proven to have an average diagnosis accuracy of roughly 95%. The study of employing image analysis to detect skin cancer has made remarkable progress over the years.

The huge HAM10000 skin cancer dataset is used in the study [7] to train a proprietary convolutional neural network (CNN), Multi-layer Perceptron (MLP), and VGG-16 for skin cancer classification. Following the training of each model, its performance is compared and assessed for parameters such as classification accuracy and processing speed. Based on the results, the VGG-16 model has the highest classification accuracy among the networks tested, while the VGG-16 and custom CNN models are much faster in terms of testing time than the MLP. The study's findings are useful because they give a standardized method for comparing and analysing different Neural networks (NN) utilized for skin cancer detection. DRANet, a lightweight attention mechanism-based DL architecture built to discriminate 11 unique skin illnesses utilizing a genuine histological image collection accumulated over the last decade, is presented in this paper [8]. The CAD system may provide not only the label for a certain condition but also a graphic diagnostic report that pinpoints probable problem



Currency Classification Using Deep Learning

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ABSTRACT: As of late, profound learning has turned into the most famous exploration heading. It fundamentally prepares the dataset through brain organizations. There are various models that can be utilized in this exploration project. All through these models, exactness of cash acknowledgment can be moved along. Clearly, such examination strategies are in accordance with our assumptions. In this paper, we basically utilize Single Shot MultiBox Detector (SSD) model in light of profound advancing as the system, utilize Convolutional Neural Network (CNN) model to extricate the highlights of paper cash, so we can all the more precisely perceive the group of the money, both front and back. Our primary commitment is through utilizing CNN and SSD, the typical exactness of money acknowledgment depends on 96.6%;

I. INTRODUCTION

An imperative job in the acknowledgment cycle and can work on the precision of the general preparation through utilizing CNN model [11]. We use CNN as an element extractor under the system of Single Shot Multi Box Detector (SSD) model.

During the time spent currency classification, we first need to consider whether the size of the dataset is adequate, on the grounds that our information assortment was from the pictures by parting the video into a solitary edge, however all the while, it might have contortion or obscuring may happen, so it is first important to alter the pictures and make the picture more clear partially, which likewise adds to the exactness in the wake of preparing.

During the time spent profound picking up, overfitting is additionally inclined to happen. It is not difficult to make the preparation cycle more confounded, increment preparing trouble and preparing time; the preparation likewise permits us

to concentrate on drop innovation and stay away from overfitting.

II. LITERATURE REVIEW

2.1. Currency detection and recognition

Previously, individuals could confirm cash, yet the perception capacity of the natural eyes are restricted, and they are troublesome to recognize reality or phony without the innovation. In spite of the fact that UV acknowledgment innovation is as of now in presence, with the improvement of duplicating innovation, this innovation isn't sufficient to assist individuals to recognize the fake money with further developed misrepresentation methods. Be that as it may, presently, in light of picture acknowledgment, various perspectives were shared by dissecting the money tone, plan elements and explicit information of cash, then, at that point, explicit distinguishing proof techniques were given [1]. Money acknowledgment techniques for information argumentation through variety examination of cash pictures, picture upgrade, turn point, etc were given [15, 16, 17].

Profound learning has a place with a brain organization. To begin with, it needs a bunch of large information. By breaking down preparing dataset, the precision of money acknowledgment could be constantly improved and our assumptions for trial results could be accomplished. Convolutional brain organization (CNN) plays During the time spent cash identification, it is important to initially decide from which viewpoint to begin testing. In 2001, it was proposed to perform cash discovery in light of neighbourhood edge data of the money. By recording the anchor lines of cash designs in the dataset, consolidating them into a layout and afterward blending the money datasets and formats that should be

A Deep Learning-based Methodology for Predicting Monkey Pox from Skin Sores

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Abstract— Monkeypox is a zoonosis that is becoming more prevalent and is the most significant orthopoxvirus epidemic in humans in the models that show the elimination of smallpox. The clinical signs of smallpox and monkeypox are identical. Approximately 1 to 11% of cases lead to death, although among survival, disfigurement and other side effects are common. A rapid clinical identification and diagnosis of monkeypox may be challenging due to its resemblance to measles and chickenpox. In situations whereby confirmatory Polymerase Chain reactions methods aren't always readily available, computer-assisted monkeypox histopathologic identification may be extremely helpful for monitoring and rapid identification of cases reported. Deep learning techniques devised revealed to be effective in the automatic identification of skin infections when there are sufficient training samples available. The paper provides a brief investigation into the growth and spread of monkeypox throughout the world while also deploying a pre-trained deep learning model for illness prediction based on symptoms. Monkeypox might cause an epidemic breakout and a worse crisis than COVID-19, which would have a bigger negative economic impact on Asian nations. The paper concludes by emphasizing that, in trying to make the environment more secure for people, society needs an automated monkeypox prediction and diagnosis system.

Keywords—Transfer Learning, Monkeypox, Skin Sore, Emergence-Monkeypox, Prediction.

I. INTRODUCTION

Even though the world is still struggling to recover from the risk posed by the worldwide spread of COVID-19, the monkeypox pandemic represents a new threat to the international community. Recent cases of COVID-19 continuing to be confirmed on a daily basis from a number of nations, despite the fact that the illness appears to be more contagious and lethal than the monkeypox virus. Therefore, it won't come as a surprise if there is ever another pandemic because there weren't enough precautions taken. A new zoonotic illness called monkeypox (MPX) is brought on by the Orthopoxvirus genera of the family Poxviridae, which includes the monkeypox virus (MPXV). MPXV is among the 4 Orthopoxvirus genera hazardous for humans, besides the cowpox infection, vaccinia infection, and the smallpox viral infection, that has now become endangered in natural [1]. A taxonomically diverse spectrum of mammalian species can contract monkeypox, although the actual natural host is unknown. Only two wild animals have been used to isolate the virus: an Ivory Coast sooty mangabey [2] and a Democratic Republic of the Congo (DRC) rope squirrel [3] are examples of these animals. Suction, respiratory sputum, or exposure with polyp effusion or crust substances are

thought to be the dissemination pathways. Another potential form of exposure is viral shedding through faeces [4]. The clinical picture of monkeypox and smallpox are quite similar, although the earlier, commonly occurring lymph node expansion associated with fever, distinguishes MPX from smallpox. Lesions start to form simultaneously and develop at a comparable rate to those of a rash, which typically develops one-three days upon the onset of lymphadenopathy and indeed a fever. Their distribution is primarily peripheral but during a severe sickness, they may cover the entire body. Before the lesion desquamates, the infection might last up to 4 weeks [5]. Patients may suffer from a variety of side effects, including respiratory failure, secondary bacterial infections, bronchiolitis, gastro - intestinal complications, hypothermia, sepsis, encephalopathy, and corneal infections with consequent visual impairment. The treatment of patients with a monkeypox virus infection is now done through supportive therapy and palliative treatment [6].

The zoonotic infection monkeypox originates from the genus Orthopoxvirus. Regarding clinical characteristics, it resembles chickenpox, measles, and smallpox [7]. The relative rarity of monkeypox and the slight variations in the skin rash of these illnesses have made it extremely difficult for medical practitioners to make an early diagnosis of this sickness. The confirmatory PCR test, on the other hand, is likewise not generally accessible. Although as per estimates, the far more current outbreak had a standardized mortality proportion of 3-6% [7], early detection of monkeypox, corresponding contact tracing, and isolation are crucial to prevent the virus from spreading throughout the community. In this case, automated computer-aided methods based on AI might significantly restrict its global spread.

Due to their superior learning capabilities, the many-faceted applications of deep learning (DL), notably the variants of convolutional neural networks (CNNs), have recently transformed various fields of medical science [8] and [9]. These deep networks can analyse images in various layers, automatically extracting significant features, and learning to identify the best representations for particular tasks when trained with a huge amount of data [10]. The application of DL-based frameworks is constrained by the need for substantial amounts of data and time-consuming training with specialized computational resources [11]. While the time and resource-related problems are solved by using accelerators (such as GPU and TPU), the dataset-related problems continue since it is challenging to find impartial, homogeneous medical data. A well-known technique for expanding the dataset size is called data augmentation [12], which involves making minor changes to

SKIN CANCER DETECTION USING DEEP LEARNING

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Abstract- : One of the most dangerous types of harmful development is an cancers of the skin. Unrepaired deoxyribonucleic acid (DNA) in skin cells causes genetic flaws or changes on the skin, resulting in skin disease. Skin disorders will generally reliably spread over other body parts, so they are definitely more treatable in beginning stages, which is the clarification that it is best perceived in the beginning stages. Due to the high rate of success, high incidence, and high cost of clinical treatment, early detection of its effects is expected. Experts have developed a variety of early detection strategies for skin-damaging development in light of these issues. Injury limits like uniformity, combination, size, shape, and so forth are utilised. to see the potentially hazardous turn of events and the harmless skin ailment of melanoma. This paper presents a basic necessity capable of outlining a huge learning methodology for the early distinctive confirmation of skin cancer. A variety of fictitious journals published research papers on skin development assurance were examined. For better comprehension, research disclosures are presented in devices such as graphs, tables, strategies, and frameworks

Keywords: Skin cancer, skin disease, convolutional neural Network, melanoma, benign, skin burns, feature extraction

I. Introduction:

A dermatologist may similarly find it hard to dissect the skin sickness and may require expensive examinations and office tests to precisely perceive the type and period of the skin contamination. The advancement of medical technology based on photonics and lasers has made it possible to examine skin diseases with much greater precision and speed. Nonetheless, the cost of such an end

is, at this point, limited and expensive. As a result, we propose a picture-handling-based approach to analysing skin diseases. This method uses image analysis to identify the kind of illness after taking a detailed picture of how an infection affects the skin. Our proposed approach is clear, fast, and doesn't require exorbitant resources other than a camera and a PC. Skin diseases may be caused by fungal infection, bacteria, allergy, or viruses, etc. A skin disease may change texture or color of the skin. In general, skin diseases are chronic, infectious and sometimes may develop into skin cancer. Therefore, skin diseases must be diagnosed early to reduce their development and spread. The diagnosis and treatment of a skin disease takes longer time and causes financial and physical cost to the patient. we propose an image processing-based approach to diagnose the skin diseases. This method takes the digital image of disease effect skin area then use image analysis to identify the type of disease. There are chronic and incurable diseases, like eczema and psoriasis, and malignant diseases like malignant melanoma. Recent researchers have found the availability of cures for these diseases if they are detected in the early stages. Atopic dermatitis, commonly called eczema, is a long-term skin disease whose common symptoms are dry and itchy skin, rashes on the face, inside the elbows, behind the knees, and on the hands and feet. Melanoma is severe and life-threatening skin cancer. The "ABCD's" of moles detected on the skin are Asymmetry, Border, Colour, and Diameter. Asymmetry implies that the shape of one half does not match the other half. Border means the edges of the mole are ragged, blurred, or irregular.

A.Objective of Research:

SURVEY ON CYBER SECURITY THROUGH WATERMARKING AND DEEP LEARNING TECHNIQUES

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ABSTRACT

With the growth of the Internet, cyberattacks are evolving quickly, and the state of cyber security is not promising. Cyber security is often an extension of traditional information technology (IT) security that aims to safeguard systems, applications, and data that are vulnerable to various online assaults, such as data theft and espionage as well as data manipulation and denial of service attacks. Due to the losses incurred by countries, companies, and people as a result of numerous cybercrime assaults, there is a need for an increase in cyber security research. This study examines deep learning (DL), watermarking techniques for cyber security applications and illustrates how deep learning and water making is used in cybersecurity and how state-of-the-art solutions may be outperformed by deep learning ones. We advise professionals to think about integrating deep learning into security systems.

Keywords: Cyber Security, Deep Learning, Watermarking, Cyber Attacks.

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Lung Cancer Prediction Using Machine Learning Technique Over Big Data

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Abstract

In current position, cancer disease is substantial menace to human life globally. 32 percent of people worldwide are affected by various types of cancer. But lung cancer depicts the highest ratio. Nowadays peoples are not having awareness about to detect the cancer in early stage. The survival rate of five year for lung cancer disease is 55 percent of the cases are affected most. However, only 14 percent of lung tumor cases are diagnosed at an early stage. For slight tumors the five-year survival rate is simply 3 percent. There are 4 stages in lung cancer. If we predict the disease in I and II stage, it is easy to cure by effortless operations. If it exceeds second stage, it may not be cured. So, diagnosing the cancer in earlier stage is the best solution to predict the patients from death. For that, the system uses the Decision Tree and K-Nearest Neighbor (KNN) Algorithms as preferred classification model. By using these algorithms, it becomes easier to diagnose the cancer in early stage. So, the survival rate of lung cancer patients becomes higher. The propound system analyze, calculate and compares the precision of Random forest, Naive Bayes and KNN and the preliminary result reveals that ID3 furnish better precision for cancer dataset. The input has been accessed only in numeric format. The algorithms also maintain key stuffs of the dataset, which are predominant for extracting performance, and so it may warrant the correct defense and effective preservation. This leads to protection of any extracting works that depends on the sequence of distances between objects, such as Random forest, Naive Bayes -search and classification, as well as many visualization techniques. In particular, it establishes a restricted isometric property, that is the tight leap on the shrinkage and enlargement of the original distances.

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Key Words: Lung cancer, Decision Tree, KNN, ID3, Naive Bayes

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Introduction

Big data is a term which is used to manage and analyze the large quantity of data which is not able to deal by the traditional software systems. Every day there is billions of data are generated from various factors such as e-commerce websites, social media, hospitals etc. Big data plays an important role

to analyze these data with more effectiveness and provides the best result. Big data techniques are used to work with the effective performance of surgery strategies, other medical tests, and also to discover the relationships among very rushed medical, clinical and diagnosis data. In the field of health sector, the facility for doctors had introduced various data chassis with an enormous amount of

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Hybrid TABU search with SDS based feature selection for lung cancer prediction

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ABSTRACT

Cancer falls under a group of diseases where abnormal growths of the cells are observed. Generally, lung cancer does not result in any type of obvious symptoms in its early stages. Among the people diagnosed with lung cancer, about 40% are found to be in an advanced stage. Thus, the motivation of the work is to present an automatic screening of lung images for early diagnosis. For this, Machine Learning (ML) methods are popularly employed as a tool among medical researchers for classifying their medical images. To improve the performance of Lung cancer detection with ML techniques, feature selection is employed. As the feature selection is a Nondeterministic Polynomial (NP) hard problem, metaheuristic algorithms are widely used for finding the optimal feature set. The Tabu Search (TS) is semi-deterministic and also tends to act as a method of local, as well as global search. The techniques are capable of discovering and further identifying the relationships and patterns among them obtained from complex datasets and are also capable of effective prediction. In this work, a new hybrid TS with Stochastic Diffusion Search (SDS) based feature selection that was employed using the Naïve Bayes, Decision tree and Neural Network (NN) classifiers to improve classification. The results demonstrate the effectiveness of the proposed TABU-SDS- NN which achieves an accuracy of 94.07%.

1. Introduction

Lung cancer has been identified to be the most common cause of cancer deaths all over the world [1]. In case actual cancer has spread, it is possible for the patient to feel different symptoms in all other parts of the body. The symptom of lung cancer can be used for the prediction of the level of risk of the disease. Both mortality and morbidity that are receivable to tobacco can be quite high. Normally, lung cancer tends to develop inside the wall or the deciduas of a bronchial tree. It may, however, begin in the lungs and further affect any other part of the respiratory system. Lung cancer is of two types, Small Cell Lung Cancer (SCLC) and Non-Small Cell Lung Cancer (NSCLC). The SCLC is connected to smoking and is fast in its growth forming larger tumors that spread very fast throughout the body. They generally start in the bronchi that are close to the center part of the chest. Screening is an form of elective anticipation for early diagnosis.

In the automated framework for screening lung images, Machine Learning (ML) is used. ML is also a very interesting area in various types

of biomedical research in which there was acceptable generalization by means of searching through the n-dimensional space for biological samples with various algorithms and techniques [4]. This has two types of ML methods which are (i) supervised learning and (ii) unsupervised learning. In the former, there is a labeled training data set that is employed for the estimation of input data to its desired output. Contrastingly, in the latter, there are no labeled examples given and there is also no notion of the output during learning. So, it depends on the model or scheme of learning to identify the pattern of input data. In the case of supervised learning, the process may be considered a problem of classification.

The various methods of feature selection were used for several years in statistics and recognition of patterns along with widespread use of techniques of ML. The methods of feature selection were required when there was too much data that had to be processed efficiently. These methods of feature selection were used for satisfying the goal of maximization of classifier accuracy, reduction of dimensionality, elimination of redundant and irrelevant data, and so on. It also helped in improving

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Mental Health Prediction of Employees at the Workplace Using Machine Learning

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ABSTRACT

Mental health is a critical issue in the workplace, affecting the well-being of employees and the productivity of organizations. Machine Learning has the potential to play a significant role in predicting mental health issues and helping organizations to proactively address the needs of their employees. In this work, we propose a machine learning approach to predict mental health issues in the workplace using demographic and job-related input features. The performance of the model is evaluated using metrics such as accuracy, Precision and F1-Score. The result shows that the proposed approach is effective in predicting mental health issues in the workplace and has the potential to be integrated into existing HR systems to provide actionable insights. However, it is important to consider ethical and legal considerations in the use of such models. Future work can focus on incorporating additional factors and developing personalized interventions on the predictions.

Keywords _ Mental Health, Employee, Logistic Regression, K Neighbors Classifier, Decision Tree classifier, Random Forest Classifier, Gradient Boosting Classifier, Ada Boost Classifier, XGB Classifier

INTRODUCTION

Mental illness is rising at epidemic rates around the world and WHO predicted that one in four people in the world will be affected by mental and neurological disorders at some point in their lives. Depressive disorders will become the second leading cause of the global disease burden by 2020 behind ischemic heart diseases but ahead of all illnesses [8].

Mental health is a crucial aspect of an individual's overall well-being and can significantly impact their work performance. With the increasing awareness of mental health issues and the importance of creating a supportive work environment, there is a growing need to predict and prevent mental health problems in employees at the workplace. Machine Learning (ML) can be a useful tool in this regard as it can analyze vast amounts of data and identify patterns that may indicate a decline in mental health.

ML algorithms can be trained on various data sources such as employees, demographic, job roles, work history, and survey responses to predict the likelihood of mental health problems. This information can be used to identify employees who may be at risk of developing mental health issues and provide them with the necessary support. There are several ML algorithms that can be used for mental health prediction, including decision trees, random forests, and neural networks. Each algorithm has its strengths and weaknesses, and the choice of algorithms depends on the type and quality of data available.

It is important to note that the predictions made by ML algorithms are not always accurate and can be affected by biases in the data. Therefore, it is crucial to validate the results using appropriate statistical methods to involve mental health professionals in the interpretation of results. In conclusion, ML can play a significant role in predicting and preventing mental health problems in employees at the workplace. However, it should be used in conjunction with other methods that can be interpreted with caution to ensure the best outcomes for employees.

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Prediction and investigation of diabetic retinopathy using ensemble classification in deep learning techniques

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Abstract

Diabetic Retinopathy (DR) is the major reason for vision impairment. Diabetes can result in diabetic retinopathy, a condition in which the retinal blood vessels are destroyed and the eyes are affected. According to the analysis, 90% of sight-threatening cases may be cured if it is discovered early. We proposed an Ensemble algorithm to predict diabetes from retinal images. The primary goal of this work is to enhance the accuracy and predict the result with minimum time consumption. The proposed system is a two-phase work in which, initially bootstrap resampling method is employed for extracting the subsamples. Next, the classified decision tree establishes a voting system for finalizing the prediction result. The performance accuracy achieved by the proposed Ensemble algorithm is compared with the logistic regression [9] and Deep neural network [10]. The observation shows proposed enhanced Ensemble mechanism attained 96% accuracy, which is more prominent than the other models.

Keywords: Deep Learning, Image Processing, Classification, Ensemble, random forest

1. Introduction

Nowadays, diabetes has become the most dangerous disease, and it is getting more common all around the world. It is fundamentally linked to the body's high blood sugar levels and insulin production. [1], which cause abnormal metabolic processes and problems, including diabetic retinopathy (vision loss), neurological disorders, kidney failures, cardiovascular illnesses, and many more. The impact of accuracy and speed in diabetes diagnosis needs to be examined [2]. Because this disease is silent or shows exceedingly mild symptoms, it can leave a person in a state of ignorance and eventually result in eyesight impairment. It is difficult to detect this illness at an early stage. To avoid the difficulties of this disease, it is critical to detect DR early on. This disease diagnosis needs professional experience and professionals with cutting-edge technologies and approaches for improving the disease's prospects. [3,4]. Recent research shows that the automatic diagnosis of DR has been effectively implemented using AI and deep learning. Choosing the right classifier and discovering meaningful features are the two most important problems in deep learning [5]. Recently, widely used ML techniques, including decision trees (DT), support vector machines (SVM), logistic regression, and others, have been used to predict diabetes [6]. The majority of DR research used machine learning techniques for feature extraction; however, challenges with manual feature extraction pushed researchers to resort to deep learning. Continuous medical research enabled the development of several computer-aided

URINARY BIOMARKERS FOR PANCREATIC CANCER PREDICTION USING RANDOM FOREST ALGORITHM

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Abstract - Early-stage pancreatic cancer is typically asymptomatic and is the fourth most prevalent cancer-related cause of death in the United States. There are few tests that enable early diagnosis or precisely forecast the course of the disease. In order to achieve this, biomarkers have been recognized as crucial instruments in the detection and treatment of pancreatic cancer. Despite the fact that there are more and more biomarkers being published in the literature, the majority of them have only shown modest sensitivity and specificity and are not yet regarded as screening tests. For the purpose of facilitating early-stage diagnosis and therapy, more effective non-invasive biomarkers are required. In this project we have worked on various Machine learning algorithms like Logistic Regression, Random Forest, Naïve bayes, XG boost and CAT boost for predicting the pancreatic cancer. Among these we have got the more accuracy from the Random Forest algorithm. The result of this study indicates that the Random Forest algorithm is the most efficient algorithm for prediction of pancreatic cancer. In the future this can be help to provide better results and help health professionals in predicting the pancreatic cancer effectively and efficiently.

Keywords – Urinary Biomarkers, Pancreatic Ductal Adeno Carcinoma (PDAC), Creatinine, LYVE1, REG1B, TFF1.

1. INTRODUCTION

A malignant tumor with a very dismal prognosis is pancreatic cancer. One of the most prevalent signs of pancreatic cancer is pain, which frequently lowers quality of life and limits functional activities. The fact that the majority of pancreatic cancer patients are diagnosed with advanced disease is largely to blame for the dismal prognosis. This malignancy is particularly severe due to the lack of symptoms, early discovery, and successful therapy in the majority of cases; the 5-year survival rate is only 5%, and 50% of patients pass away within six months of diagnosis. Smoking, food (greater risk with larger percentages of fat and meat in the diet), obesity, chronic diabetes mellitus, and chronic pancreatitis are all known risk factors for pancreatic cancer. .

It's become common practise to use machine learning techniques for feature selection. Recently, statistical machine learning techniques based on decision trees, such Random Forest (RF), have become more popular. Transcriptomics, metabolomics, methylation, and proteomics are just a few of

the high-dimensional omics research that have effectively used the ensemble learning technique known as RF.

A. Process of data flow diagram

Data collection is necessary for machine learning, and there is a wealth of historical data. There is enough historical data and unprocessed data for data collection. Raw data cannot be used directly without pre-processing. Then, what kind of algorithm and model is utilized to pre-process. This model has been tested and trained, and it makes accurate predictions with little errors. Accuracy was involved in the tuned model.

TABLE 1: DATA FLOW DIAGRAM

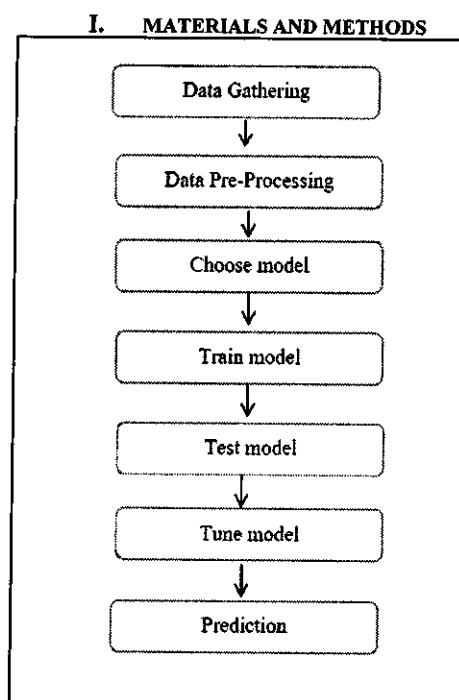


FIG 1.1 Data flow chart diagram

2. MODULE DESCRIPTION

For the study, a variety of well-known techniques were employed, including logistic regression, K-nearest neighbour (KNN), support vector machine (SVM),

CHATBOT BASED ON EMOTIONS USING DEEP LEARNING

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Abstract—Human emotions are unpredictable as they change very frequently. Human emotions are mental states of feelings that arise spontaneously and are accompanied by physiological changes. Emotions which can be detected through the facial expressions play a major role and are very much important for non-verbal communication as they reflect on their faces. In the process of developing computer modeling of human's emotions, a lot of researches have been made. Therefore, a chatbot detecting the emotions can be a better approach for detecting emotions. In this paper, we are proving a better approach to detect human emotions using Convolutional Neural Network (CNN) and develop a deep learning model that can accurately classify the facial expressions. In this paper, FER 2013 dataset has been applied for training. The assessment from the proposed system yields in a quite good accuracy results and may give encouragement to the researchers for future model of chatbot based on emotions.

Keywords— *Emotion identification, Facial Expression Detection, Deep Learning, Natural Language Processing, Natural Language Generation, Convolutional Neural Network (CNN).*

I. INTRODUCTION

Facial expressions play a major role in everyone's life. They are at most important while having non-verbal communication between people. Emotions and related changes in the facial muscles together known as facial expressions help us to identify in what mood a person is and it enables to make conversations with the other person based on their mood. The different categories of emotions which unanimously recognized across different cultures and by

different people are happiness, sadness, disgust, fear, anger, neutral and surprised.

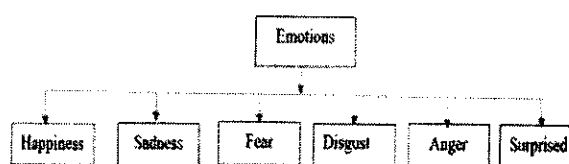


Fig. 1: Basic Categories of emotions

Chatbots have been increasingly popular in recent years as they allow computer programs to interact with humans using natural language processing. One of the most fascinating forms of chatbots is the emotion based chatbot, which can recognize and respond to human emotions using artificial intelligence. Emotion chatbots are computer programs designed to stimulate conversations with the human users. The chatbot measures, understands, simulates and reacts to human emotions.

Charles Darwin, a naturalist, said that since emotions are important for animal and human development and reproduction, they are adaptive and evolving. There are many ideas on human emotions, and they all agree that emotions are important in our day-to-day existence. It establishes who we are. The objective of this research is to enable machine comprehension of emotions.

The emergence of artificial intelligence has prompted us to consider the best ways to facilitate human-computer interaction. We learned Convolutional neural networks with MFCC features were determined to work the best across a number of study articles. Interclass classifications are made using other techniques, such as contrastive loss utilizing

A Deep Learning-based Methodology for Predicting Monkey Pox from Skin Sores

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Abstract— Monkeypox is a zoonosis that is becoming more prevalent and is the most significant orthopoxvirus epidemic in humans in the models that show the elimination of smallpox. The clinical signs of smallpox and monkeypox are identical. Approximately 1 to 11% of cases lead to death, although among survival, disfigurement and other side effects are common. A rapid clinical identification and diagnosis of monkeypox may be challenging due to its resemblance to measles and chickenpox. In situations whereby confirmatory Polymerase Chain reactions methods aren't always readily available, computer-assisted monkeypox histopathologic identification may be extremely helpful for monitoring and rapid identification of cases reported. Deep learning techniques devised revealed to be effective in the automatic identification of skin infections when there are sufficient training samples available. The paper provides a brief investigation into the growth and spread of monkeypox throughout the world while also deploying a pre-trained deep learning model for illness prediction based on symptoms. Monkeypox might cause an epidemic breakout and a worse crisis than COVID-19, which would have a bigger negative economic impact on Asian nations. The paper concludes by emphasizing that, in trying to make the environment more secure for people, society needs an automated monkeypox prediction and diagnosis system.

Keywords—Transfer Learning, Monkeypox, Skin Sore, Emergence-Monkeypox, Prediction.

I. INTRODUCTION

Even though the world is still struggling to recover from the risk posed by the worldwide spread of COVID-19, the monkeypox pandemic represents a new threat to the international community. Recent cases of COVID-19 continuing to be confirmed on a daily basis from a number of nations, despite the fact that the illness appears to be more contagious and lethal than the monkeypox virus. Therefore, it won't come as a surprise if there is ever another pandemic because there weren't enough precautions taken. A new zoonotic illness called monkeypox (MPX) is brought on by the Orthopoxvirus genera of the family Poxviridae, which includes the monkeypox virus (MPXV). MPXV is among the 4 Orthopoxvirus genera hazardous for humans, besides the cowpox infection, vaccinia infection, and the smallpox viral infection, that has now become endangered in nature [1]. A taxonomically diverse spectrum of mammalian species can contract monkeypox, although the actual natural host is unknown. Only two wild animals have been used to isolate the virus: an Ivory Coast sooty mangabey [2] and a Democratic Republic of the Congo (DRC) rope squirrel [3] are examples of these animals. Suction, respiratory sputum, or exposure with polyp effusion or crust substances are thought to be the dissemination pathways. Another potential form of exposure is viral shedding through faeces [4]. The

clinical picture of monkeypox and smallpox are quite similar, although the earlier, commonly occurring lymph node expansion associated with fever, distinguishes MPX from smallpox. Lesions start to form simultaneously and develop at a comparable rate to those of a rash, which typically develops one-three days upon the onset of lymphadenopathy and indeed a fever. Their distribution is primarily peripheral but during a severe sickness, they may cover the entire body. Before the lesion desquamates, the infection might last up to 4 weeks [5]. Patients may suffer from a variety of side effects, including respiratory failure, secondary bacterial infections, bronchiolitis, gastro - intestinal complications, hypothermia, sepsis, encephalopathy, and corneal infections with consequent visual impairment. The treatment of patients with a monkeypox virus infection is now done through supportive therapy and palliative treatment [6].

The zoonotic infection monkeypox originates from the genus Orthopoxvirus. Regarding clinical characteristics, it resembles chickenpox, measles, and smallpox [7]. The relative rarity of monkeypox and the slight variations in the skin rash of these illnesses have made it extremely difficult for medical practitioners to make an early diagnosis of this sickness. The confirmatory PCR test, on the other hand, is likewise not generally accessible. Although as per estimates, the far more current outbreak had a standardized mortality proportion of 3-6% [7], early detection of monkeypox, corresponding contact tracing, and isolation are crucial to prevent the virus from spreading throughout the community. In this case, automated computer-aided methods based on AI might significantly restrict its global spread.

Due to their superior learning capabilities, the many-faceted applications of deep learning (DL), notably the variants of convolutional neural networks (CNNs), have recently transformed various fields of medical science [8] and [9]. These deep networks can analyse images in various layers, automatically extracting significant features, and learning to identify the best representations for particular tasks when trained with a huge amount of data [10]. The application of DL-based frameworks is constrained by the need for substantial amounts of data and time-consuming training with specialized computational resources [11]. While the time and resource-related problems are solved by using accelerators (such as GPU and TPU), the dataset-related problems continue since it is challenging to find impartial, homogeneous medical data. A well-known technique for expanding the dataset size is called data augmentation [12], which involves making minor changes to the existing data in order to produce new samples. Transfer learning [11] is also a frequently employed method when data is scarce. This technique uses a CNN model that has already been trained on a big dataset (like ImageNet) and

MULTIPLE SERVICE AUTHENTICATIONS WITH CLOUD OTP AS A SERVICE

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Abstract

Password-based authentication is recognized as insufficient by owners as numerous internet solutions began to influence one another. One Time passwords (OTPs), that may authenticate owners by agreeing about the possession associated with a pre shared benefit, are just about the most favorite possession components within 2 component authentications. 2 component authentications is a popular subcategory of multi factor authentication. The inspiration powering proposing these kinds of structure is treating the little to moderate sizing companies in the concern of deploying an OTP alternative for the authentication of theirs requirements. A present authentication treatment such as just the traditional understanding element is predisposed against numerous community, opportunistic or personalized strikes. In addition, changeover from history methods to superior protection strategies is pricey. Internet qualifications are utilized to recuperate some other qualifications and also intricate strikes are aimed towards the most fragile among most of these internet qualifications. Opposition to OTP replays and also livens strikes, opposition to 3rd party entry, resistance to corrupt insiders, as well as opposition to Denial-of-Service strikes.

Keywords: One Time Password (OTP), Product Security, Authentication Service.

1. INTRODUCTION

Authentication of an end user may be carried out by among the three: expertise, possession, and inherence. When the title proposes, know-how element calls for something which an end user should comprehend to verify the uniqueness. The typical exercise of passwords and typing usernames goes down into this particular group. This method assumes the username is publicly identified and also the password is committed to memory through the person. Authentication is secure so long as the person is definitely the only person who is able to show the password on the program used. Nevertheless, the real life goes through trained us passwords can't be held secure readily as well as the man mind isn't effective at handling numerous passwords for a lot of providers at once. on making use of OTP, that may authenticate owners by agreeing about the ownership associated with a pre collective benefit, are just about the most favorite possession components within 2 component authentication (FA or maybe 2TFA). TFA is a general subgroup of multi factor authentication (MFA). Knowledge element, for training, will be the widely recognized username password pair. As this is essentially the most widely deployed approach to validation, just about all TFA operations consist of this particular feature and also provides among the others. Within the optional method, we've created the multilevel authentication for customer and also the cloud. In addition, the following sections are included in the paper's introduction: Section 2 includes the most recent relevant work on Cloud OTP as a service. Section 3 contains a proposed approach for Multiple Service authentication, Section 4 is a multi-factor authentication implementation, Section 5 is a performance analysis, and Section 6 is the conclusion and feature work.

2. RELATED WORK

Globalization has initiated to increasingly a simple financial as well as radical mutuality, and possesses subdued basic assumptions relating to sovereignty and also the job of nation-state [1]. The current authentication as well as critical empathetic pattern for to apply a sensible flash memory card. In order to fulfill the OTP needs, the smart flash memory card is now a decisive gadget, a camera that's popular [2]. In order to lose striking over the usually intangible meaning of the idea of the 'smart city'. Possibly the most newly available variant of Urban Audit material established to be able to measure the elements figuring out the overall performance of serviceable urban centers on OTP concentration [3]. A far more beneficial method is



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A Multi-Stage Faster RCNN-Based iSPLInception for Skin Disease Classification Using Novel Optimization

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Abstract

Nowadays, skin cancer is considered a serious disorder in which early identification and treatment of the disease are essential to ensure the stability of the patients. Several existing skin cancer detection methods are introduced by employing deep learning (DL) to perform skin disease classification. Convolutional neural networks (CNNs) can classify melanoma skin cancer images. But, it suffers from an overfitting problem. Therefore, to overcome this problem and to classify both benign and malignant tumors efficiently, the multi-stage faster RCNN-based iSPLInception (MFRCNN-iSPLI) method is proposed. Then, the test dataset is used for evaluating the proposed model performance. The faster RCNN is employed directly to perform image classification. This may heavily raise computation time and network complications. So, the iSPLInception model is applied in the multi-stage classification. In this, the iSPLInception model is formulated using the Inception-ResNet design. For candidate box deletion, the prairie dog optimization algorithm is utilized. We have utilized two skin disease datasets, namely, ISIC 2019 Skin lesion image classification and the HAM10000 dataset for conducting experimental results. The methods' accuracy, precision, recall, and F1 score values are calculated, and the results are compared with the existing methods such as CNN, hybrid DL, Inception v3, and VGG19. With 95.82% accuracy, 96.85% precision, 96.52% recall, and 0.95% F1 score values, the output analysis of each measure verified the prediction and classification effectiveness of the method.

Keywords Skin cancer prediction · Prairie dog optimization · Intelligent signal processing lab inception · Region proposal networks

Introduction

The growth of abnormal cells in the body leads to the generation of skin cancer, further depending upon their features, nature, and seriousness may spread to various organs of the human body. The visible part obtained in the human body

is the skin which is easily affected by environmental infections, and this leads to generating skin cancer. Each year 46,000 new people were affected by skin cancer in the UK. Melanoma and non-melanoma are the types of skin cancer. Non-melanoma is divided into two types that are basal cell skin cancer (BCC) and squamous cell skin cancer (SCC). The melanoma type is lethal [1]. Melanoma-type skin cancer is caused by a variety of factors such as the radiation of ultraviolet (UV) and genetic aspects. Melanoma starts from skin melanocytes and which yield dark pigment on the body [2]. BCC and SCC perform metastasize infrequently. So, they have a low level of risk and it causes a low-level death rate. But the occurrence of non-melanoma type is rare. In 2017, WHO reports two to three million people were affected by non-melanoma [3]. Skin cancer melanoma is complex, so early identification of this type is most important because of the decreasing death rate and also supports saving the patient's life. The visual image of melanoma and non-melanoma is the same. So, identification of which type of skin cancer occurs is a challenging work which is why

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33

Perceptual Video Summarization Using Keyframes Extraction Technique

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Abstract - The growth of video content in recent years is a challenging problem due to increased memory storage and time consuming for analyzing content of the video. Therefore, there is a need to reduce the content for human usage. This paper presents a keyframes technique that uses co-occurrence matrix and permutation computation for perceptual video summarization (PVS). The Human Visual System (HVS) needs to incorporate the PVS. It helps to allow for the importance of perceptually significant contents. The proposed method uses different kinds of videos to evaluate the effectiveness of the work. The subjective evaluation scores have evaluated the proposed work.

Keywords – Perceptual Video Summarization, Keyframes Extraction, Co-occurrence Matrix, and Permutation Computation

I. INTRODUCTION

The huge amount of video data has been increased rapidly in recent years. Therefore, the processing of content takes a sheer amount of time to analyze. Also, the memory space required to store the processed content is huge. These limitations of both memory space and consumption time are motivated a search for meaningful or automatic synopsis of the content. Many research works have been done for finding a solution for this research problem. An automatic synopsis analysis tool is immense. It helps for alleviating memory space to store processed data. The resultant summary video needs to be meaningful as original video data. An effective Video Summary (VS) should convey the message of its original video without any jerkiness. In order to achieve the expected VS, the appropriate feature of the information content of the video is necessary and similar meaningless content need to remove. Also, it will be used to filter out the most significant semantic content into a brief and considerably reduced form. Due to VS is a subjective mission, a summary needs to agree with the general user's perception. Effective VS should consist of all the significant semantic content of the video according to human's perception [1-3].

Many research studies have been exposed on the HVS. The HVS has a unique property which consists of visual significance to different regions. A video summary should convey an original message without any important quality degradation. In

reality, a person does not focus on the whole content of the image. They mainly involved a locally foveation region which is a significant region of the image. It leads to reduced redundancy in the summary. In order to preserve important HVS factors of the visual features, the algorithm needs to consider texture, edges, colors, and motion details in the frame. In order to efficiently perform PVS, this paper introduces the PVS using keyframes extraction technique.

II. LITERATURE REVIEW

A. Video Summarization (VS)

The VS handle enormous amounts of sequential video data. There are many challenges to meet by the VS algorithms such as redundant information, missed important information [4-6] to make a meaningful summary. Two types of VS are available in literature such as keyframe extraction and video skim. In a keyframe extraction-based VS techniques [7-12], a significant set of frames needs to be extracted that should effectively represent semantic content of the video [13-17], the algorithms collected an interesting small number of moving images from the original video as a video clip that represents the VS.

B. HVS

In the recent past, many research works have been gained reasonable information from the HVS. Many works have been done in the areas such as image enhancement [18], video coding, and video compression [19-21]. These approaches can be incorporated in many research works [22-23] in order to improve the perceptual quality. The spatial information or bothspatial and temporal information can be considered by the HVS based model.

Z. Lu and K. Grauman [24], discovering most interesting objects within a frame sequence for making a story driven egocentric video. Object window is utilized to extract needed object. Then, the interested object is taken for story-driven egocentric VS. Napoletano et al. [25] developed the model using a Bayesian forging. This model is used for extracting the objects and their activities to make a video summary. Otani et al. [26] key points matching based algorithm is used in the segmentation method. The segmentation method is used to find the objects in a frame sequence. Zhang et al. [27] applied Spatio-temporal

AN IOT-BASED SYSTEM FOR FAULT DETECTION AND DIAGNOSIS IN SOLAR PV PANELS

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Abstract- This abstract describes an IoT-based system for fault detection and diagnosis in solar PV panels. The proposed Fuzzy logic-based fault detection algorithms aims to improve the performance and reliability of solar PV panels, which can be affected by various faults such as shading, soiling, degradation, and electrical faults. The system includes wireless sensor nodes that are deployed on the panels to collect data on their electrical parameters and environmental conditions, such as temperature, irradiance, and humidity. The collected data is then transmitted to a central server for processing and analysis using machine learning algorithms. The system can detect and diagnose faults in real-time, and provide alerts and recommendations to maintenance personnel to take appropriate actions to prevent further damage or downtime. The system has several advantages over traditional manual inspection and maintenance methods, including reduced downtime, lower maintenance costs, and improved energy efficiency. The proposed system has been validated through experimental tests, and the results show that it can accurately detect and diagnose faults in solar PV panels with high reliability and efficiency.

Keywords: Fault detection, Internet of Things (IoT), Solar PV panels, Photovoltaic;

1. Introduction

The increasing demand for renewable energy sources has led to the rapid growth of solar photovoltaic (PV) systems. However, these systems are prone to faults and failures that can result in significant energy losses and reduced system efficiency. In recent years,

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Leaky-Integrate-and-Fire Neuron as Pacemaker for Interval Timing

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Abstract



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- I. Introduction
- II. Spiking Neural Networks
- III. The Model
- IV. Results And Discussion
- V. Conclusion

Abstract: Perception of interval timing influences the behaviour of the organisms. Computational models of interval timing are categorized into Pacemaker Accumulator models, Memory... [View more](#)

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Abstract: Perception of interval timing influences the behaviour of the organisms. Computational models of interval timing are categorized into Pacemaker Accumulator models, Memory-based models, Oscillator models and Random Process models, Ramping Activity models and Population Clock models. Random process models or drift diffusion models are biologically plausible models and are based on the activity of spiking neurons. In this paper, we proposed a computational model of interval timing based on spiking neurons. The results are validated against the Scalar property of interval timing.

Authors

Figures

References

Keywords

Metrics

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Leaky-Integrate-and-Fire Neuron as Pacemaker for Interval Timing

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Komala Anamalamudi ; Bapi Raju Surampudi ; Goutam Chakraborty ; Nirupa Vakkala All Authors ***

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Abstract



Document Sections

- I. Introduction
- II. Spiking Neural Networks
- III. The Model
- IV. Results And Discussion
- V. Conclusion

Abstract: Perception of interval timing influences the behaviour of the organisms. Computational models of interval timing are categorized into Pacemaker Accumulator models, Memory... [View more](#)

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Abstract: Perception of interval timing influences the behaviour of the organisms. Computational models of interval timing are categorized into Pacemaker Accumulator models, Memory-based models, Oscillator models and Random Process models, Ramping Activity models and Population Clock models. Random process models or drift diffusion models are biologically plausible models and are based on the activity of spiking neurons. In this paper, we proposed a computational model of interval timing based on spiking neurons. The results are validated against the Scalar property of interval timing.

Authors

Figures

References

Keywords

Metrics

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1✓	Object Identification with Voice Prompt Using YOLO v7.	M Bommy, Y Akhil, V Alekhya, S Musfira, D Sreenath	ICRAET-2023	International	5/19/2023	NO	-	-
2	Real World Autonomous IoT Based Data Privacy Protection Using Machine Learning	Mr ANANDARAJ B	2023 Eighth International Conference on Science Technology Engineering and Mathematics (ICONSTEM)	International	6/7/2023	NO	-	DOI:10.1109/ICONSTEM56934.2023.10142934
3	A Novel Architecture for Developing IoT Solutions Applied to Healthcare	Mr. P. Kaliyamoorthi	ICAAIC 2023	International	5/4/2023	YES	IEEE	10.1109/ICAAIC56838.2023.10140729
4	A Hybrid Model for Skin Disease Classification using Transfer Learning	Dr S Kusuma, G vasundradevi, D M Abhinay Kanth	Third International Conference on Intelligent Computing, Instrumentation And Control Technologies	International	8/12/2022	YES	IEEE/Scopus	978-1-6654-1004-5/22
5✓	FACE MASK DETECTION USING DETECTRAN2	Mr. Muthugurunathan. G	National Conference on Recent Advancements in Computing, Communication & Societal Applications, NASA'23	National	4/20/2023	NO	NA	NA

6	A Hybrid Model for Skin Disease	Mr. Abhinay Kanth D M	Third International Conference on Intelligent Computing, Instrumentation And Control Technologies - ICICICT-2022	International	8/12/2022	YES	IEEE/Scopus	NA
7	Power,Energy,Control and Transmission Systems	Dr. S Elango	ICPECTS'22	International	12/8/2023	No	NA	NA
8 /	Super Artificial Intelligence Medical Healthcare Services and smart wearable system based on IOT	Dr. S Elango	ICSSIT23	International	1/23/2023	YES	IEEE/Scopus	10.1109/ICSSIT55814.2023.10060928
9 /	Analysis of Artificial Intelligence in Medical Sectors	Dr. S Elango	ICAISS22	International	11/24/2022	YES	IEEE/Scopus	10.1109/ICAISS55157.2022.10010820
10	Machine learning based Electronics Engineering semiconductor	Dr. S Elango	ICIRMST23	International	1/21/2023	No	NA	NA
11 /	"Detecting Malicious Node in IoT Based Wireless Sensor Network Using Blockchain", National Conference on Recent Advancements in Computing, Communication and Societal Applications	Dr R Nidhya	NASA23	National	Apr-23	No	NA	NA
12 /	"Smart Healthcare Monitoring System Using Internet of Things", National Conference on Recent Advancements in Computing, Communication and Societal Applications (NASA23)	Dr R Nidhya	NASA23	National	Apr-23	No	NA	NA

13	"Predicting Diseases using facial features with Deep learning", International conference on Innovations in Electrical, Information & Communication Engineering	Dr R Nidhya	ICIEICE23	International	Apr-23	No	NA	NA
14	"Brain Tumor Detection from MRI Images Using CNN",	Dr R Nidhya	ICIEICE23	International	Apr-23	No	NA	NA
15	Emotion Based Music Recommendation System Using CNN	Dr. D. J. Ashpin Pabi	ICRET23	International	7-May-23	No	NA	NA
16	A Survey Paper on Cloud Computing and Service	Dr.R.Sudhakar	NASA'23	National	19 th & 20 th April,2023	No	NA	NA
17	Unmanned Aerial Vehicle Image crop Classification based on Deep Learning Techniques	Dr.R.Sudhakar	NASA'23	National	19 th & 20 th April,2023	No	NA	NA
18	Review of Various Block Matching Algorithms using Motion Estimation Techniques	Dr.R.Sudhakar	NASA'23	National	19 th & 20 th April,2023	No	NA	NA
19	Internet of Things (IoT) and its Applications	Dr.R.Sudhakar	NASA'23	National	19 th & 20 th April,2023	No	NA	NA
20	Brain Diseases Classification and Age Estimation using MRI	Dr.R.Sudhakar	11 th International Conference on Contemporary Engineering and Technology	International	02 nd May,2023	No	NA	NA
21	Driver Drowsiness Detection Using Deep Learning Techniques	Dr.R.Sudhakar	11 th International Conference on Contemporary Engineering and Technology	International	02 nd May,2023	No	NA	NA

22	Reading Assistant for Visually Challenges Peoples with Advance Image Capturing Technique using Machine Learning	Dr.R.Sudhakar	11 th International Conference on Contemporary Engineering and Technology	International	02 nd May,2023	No	NA	NA
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Object Identification with Voice Prompt using YOLO v7

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Abstract

Millions of people worldwide struggle to grasp their surroundings owing to visual impairment. Around 285 million individuals have visual impairments, of which 246 million have a decline in visual perceptivity and 39 million are eyeless, according to the World Health Organization. They have an extremely hard time conforming to a strange terrain. The use of cutting-edge technology offers the possibility of helping those who suffer from sight loss. In this design, we used the sense of hearing to visualize the object kept before the person and the camera. We implemented the state-of-the-art "You Only Look Once Unified, Real-Time Object Discovery" YOLOv7 algorithm trained on the COCO dataset. We calculate the labels (bounding boxes), and confidence levels of the object in the image and have the detected text result as an audio speech using JavaScript Speech Synthesis, which can be employed in numerous areas like Autonomous vehicles, Robotics and can also assist visually crippled persons.

Keywords

Object discovery, Yolov7, COCO, Audio speech.

Real World Autonomous IoT Based Data Privacy Protection Using Machine Learning

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Abstract- — Connecting everyday objects to the web (IoT) has rapidly grown what might be anticipated to continue expanding with an estimated By 2025, there will be 75 billion linked gadgets. This increase in IoT devices has led to concerns regarding data privacy and security. Autonomous IoT-based data privacy protection using machine learning (ML) has the potential to address these concerns. This research proposes a real-world application of autonomous IoT-based data privacy protection using ML. The system will use ML algorithms to analyze data and identify potential privacy breaches. It will then autonomously take appropriate actions to protect the data and prevent further breaches. The proposed research will use a mixed-methods approach, including surveys, case studies, and experiments, to collect data from IoT users, privacy experts, and ML researchers. The data collected will be used to evaluate the effectiveness of the proposed system in protecting data privacy and to identify any potential ethical concerns. The expected outcomes of this research are the development of an autonomous IoT-based data privacy protection system using ML, evaluation of its effectiveness in protecting data privacy, and identification of any ethical concerns that may arise. Overall, this research has the potential to contribute to the development of autonomous IoT-based data privacy protection systems that are effective in protecting data privacy while upholding ethical standards. The proposed Ultimately, this strategy might significantly alter the status quo of data privacy is protected in IoT, ensuring that users can confidently use IoT devices without concerns about privacy breaches.

Keywords: *Internet of Things, Data Privacy, Machine Learning, etc.,*

I. INTRODUCTION

The Internet of Things The Internet of Things (IoT) is a system whereby everyday items and appliances are able to send and receive data through a network exchange data together with one another. The objects can be anything from household appliances and vehicles to industrial machines and medical devices. IoT has the potential to transform various industries, including healthcare, transportation, manufacturing, and agriculture. IoT devices collect and transmit data in real-time, providing valuable insights that can be used help boost productivity, cut expenses, and enrich interactions with clients. For instance, in the healthcare industry, IoT devices can monitor patients' vital signs and send alerts to healthcare professionals in case of abnormalities. In the transportation industry, IoT sensors can be used to optimize routes and improve safety by alerting drivers of potential hazards.

However, the rapid growth of IoT devices has led to concerns about data privacy and security. IoT devices can collect sensitive data, such as personal information and location data, which may open itself up to cyber assaults and hacking. Therefore, it is crucial for ensuring the safety and privacy of IoT devices and their data privacy is protected. Overall, IoT has the potential to revolutionise our daily lives and the way we do business, improving efficiency and enhancing our experiences. However, it is crucial to ensure that data privacy and security are prioritized to protect users' sensitive information.

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A Novel Architecture for Developing IoT Solutions Applied to Healthcare

Publisher: IEEE [Cite This](#) [PDF](#)

Levina : P. Kallyamoorthi ; Vinjamuri S.N.CH. Dattu ; G Dineshnath ; S. Jaiganesh ; Dinesh Chandra Do... All Authors



- Abstract
- Document Sections
 - 1. Introduction
 - 2. Related Works

Abstract:
 The objective of this research study is to reduce the complexity and increase the flexibility to create and maintain computational solutions applied to health, where the scenarios are quite complex and dynamic. The main contributions of HealthDash are: (1) Provide dynamism in the process of creating IoT applications, both in the fog layer and in the cloud layer, through unification action of technologies adopted at both levels; (2) provide means to reduce the volume of information transmitted between the fog layer and the cloud layer, enabling the

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A Hybrid Model for Skin Disease Classification using Transfer Learning

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Abstract— Worldwide, around two people die each hour due to skin cancer. The disease is normally originated by expose to sunrays. Early detection is very important to prevent it from spreading. The traditional method of detecting skin cancer is through a procedure known as Biopsy. This is an invasive and time-consuming procedure that involves removing the skin cells. With the advancement of imaging techniques, early detection of skin cancer can be made possible. A study has been conducted to develop two deep learning architectures that can automatically detect skin cancer using 3700 clinical images. One of the architectures is based on the AlexNet framework, which is a transfer learning algorithm. The other one uses a hybrid structure that combines the long short term memory and the temporal properties of the images. The first architecture, which is based on the AlexNet framework, has an accuracy of 99.25%. However, the second hybrid structure, which is a combination of the long-term memory and the temporal properties, has an accuracy of 99.75%. The results of the study contribute to the field of the deep structural model.

Keywords— Skin Cancer, Deep Learning, Transfer Learning, AlexNet, Long Short Term Memory

I. INTRODUCTION

The skin is the biggest organ of the body, comprising of different tissues and organs. It can be damaged or improved by various factors such as exposure to ultraviolet radiation or improper hydration. Skin diseases can also be caused by allergic reactions, fungi, and other microbes that affect the skin's texture and appearance [1]. In both tele dermatology and online diagnosis, the ability to recognize early-stage skin cancer is acquired through exposure to the disease and knowledge-based training. However, this process can be challenging due to the varying training requirements of different clinicians. Computerized image-based diagnosis models are being refined to help reduce the workload of clinicians and detect early-stage skin cancer. These systems can be designed using deep learning and machine learning techniques. Researchers have been able to train various types of AI algorithms on the principles of deep learning and machine learning to perform skin cancer diagnoses.

Deep learning is a process that uses a vast amount of data to create new accounts [2,3]. It is carried out through Neural Networks. This technology has influenced numerous scientific achievements. Due to the increasing amount of

biomedical data, many specialists have started using deep learning techniques to improve their data processing capabilities. This technology has been able to perform various tasks related to image processing [4,5]. Due to the accuracy of deep learning, it is expected that it will replace the roles of image experts in diagnosing diseases. In this research, we present an architecture for deep learning that focuses on skin disease detection. Kaggle Database [6] is used as the dataset. The paper presents two different architectures that are based on AlexNet's modified version and the LSTM layer. The second architecture features a hybrid structure that combines the two. This study contributes to the development of an ANN-based skin disease detection architecture.

The main contribution of this work is:

1. To develop an artificial neural network based robust automatic skin lesion segmentation system.
2. To detect early signs of skin disease. It is proposed to use a CNN-based model using a transfer learning approach.
3. The proposed hybrid framework is contrasted with the other latest frameworks.
4. The proposed approach is straightforward; it can undoubtedly identify skin illness completely.

The paper is partitioned into five sections: Section 2, which surveys the various studies related to skin disease; Section 3, which presents the methodology and dataset; Section 4, which reviews the results and discussion; and finally, Section 5, which provides an overview of the proposed system.

II. RELATED WORKS

Currently, most of the approaches used to diagnose and classify skin diseases rely on imaging technology. However, they can also recognize the condition using various image processing techniques, such as segmentation, image transformation, and equalization. The images captured for these applications are then fed into various artificial intelligence systems, which are capable of analyzing and classifying the conditions. Some of these include Deep Learning, Convolutional Neural networks(CNN), and Back Propagation models [7]. Different loss functions are commonly used in this field, such as classification and discrepancy. The main plan is used by approach transfer

FACE MASK DETECTION USING DETECTRAN2

K Balaji Ganesh¹, Shaik Aiman Anjum², Muthugurunathan G³ ✓

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Madanapalle Institute of Technology & Science, Madanapalle.

Abstract

In this proposed model, we are detecting whether an individual is wearing a face mask or not in a live streaming video. The Computer Vision and Deep Learning algorithms are used in this proposed model for identifying the face mask on an individual's in the real-time scenarios. There are three classes: a face without mask, a face with incorrect position of mask, a face with correct position of mask. TorchVision, a Computer Vision algorithm is used in the model for classifying the objects present in dataset and identifying the face objects from the dataset. The Detectran2, Facebook AI Research's next generation Deep Learning algorithm is applied for detecting the objects in the real-time scenarios. The proposed system can be deployed in various environments such as schools, offices, and public places to help to enforce mask-wearing guidelines and promote public health and safety.

UNMANNED AERIAL VEHICLE IMAGE CROP CLASSIFICATION BASED ON DEEP LEARNING TECHNIQUES

Dr.R.Sudhakar¹, Dr.P.V.Venkateswara Rao², Arya Surendran³

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Abstract

Technology for image processing from unmanned aerial vehicles is useful for crop classification. Most shallow learning methods with few computational units are used for UAV picture classification. Both the generalization and recognition accuracy of these techniques are subpar. Deep learning has great functional learning capabilities and strong functional representations. The learned features have produced outstanding results in picture classification and are crucial components of the data. To speed up the model's convergence and guarantee the precision of plant classification in real-world apps, we modified the AlexNet network structure by reducing the number of network layers. To increase the accuracy of plant classification through the fusion of spatial and spectral traits, trait combination and comparative analyses were carried out to identify the most efficient trait combinations. We further improved the classification findings by optimizing the classification model using a novel augmentation approach, and we attained perfect performance in crop classification of drone images. The deep learning technique can successfully identify plant species in UAV images, according to experimental findings.

A Hybrid Model for Skin Disease Classification using Transfer Learning

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Abstract— Worldwide, around two people die each hour due to skin cancer. The disease is normally originated by expose to sunrays. Early detection is very important to prevent it from spreading. The traditional method of detecting skin cancer is through a procedure known as Biopsy. This is an invasive and time-consuming procedure that involves removing the skin cells. With the advancement of imaging techniques, early detection of skin cancer can be made possible. A study has been conducted to develop two deep learning architectures that can automatically detect skin cancer using 3700 clinical images. One of the architectures is based on the AlexNet framework, which is a transfer learning algorithm. The other one uses a hybrid structure that combines the long short term memory and the temporal properties of the images. The first architecture, which is based on the AlexNet framework, has an accuracy of 99.25%. However, the second hybrid structure, which is a combination of the long-term memory and the temporal properties, has an accuracy of 99.75%. The results of the study contribute to the field of the deep structural model.

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The skin is the biggest organ of the body, comprising of different tissues and organs. It can be damaged or improved by various factors, such as exposure to ultraviolet radiation or improper hydration. Skin diseases can also be caused by allergic reactions, fungi, and other microbes that affect the skin's texture and appearance [1]. In both tele dermatology and in-site diagnosis, the ability to recognize early-stage skin cancer is acquired through exposure to the disease and knowledge-based training. However, this process can be challenging due to the varying training requirements of different clinicians. Computerized image-based diagnosis models are being refined to help reduce the workload of clinicians and detect early-stage skin cancer. These systems can be designed using deep learning and machine learning techniques. Researchers have been able to train various types of AI algorithms on the principles of deep learning and machine learning to perform skin cancer diagnoses.

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The main contribution of this work is:

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II. RELATED WORKS

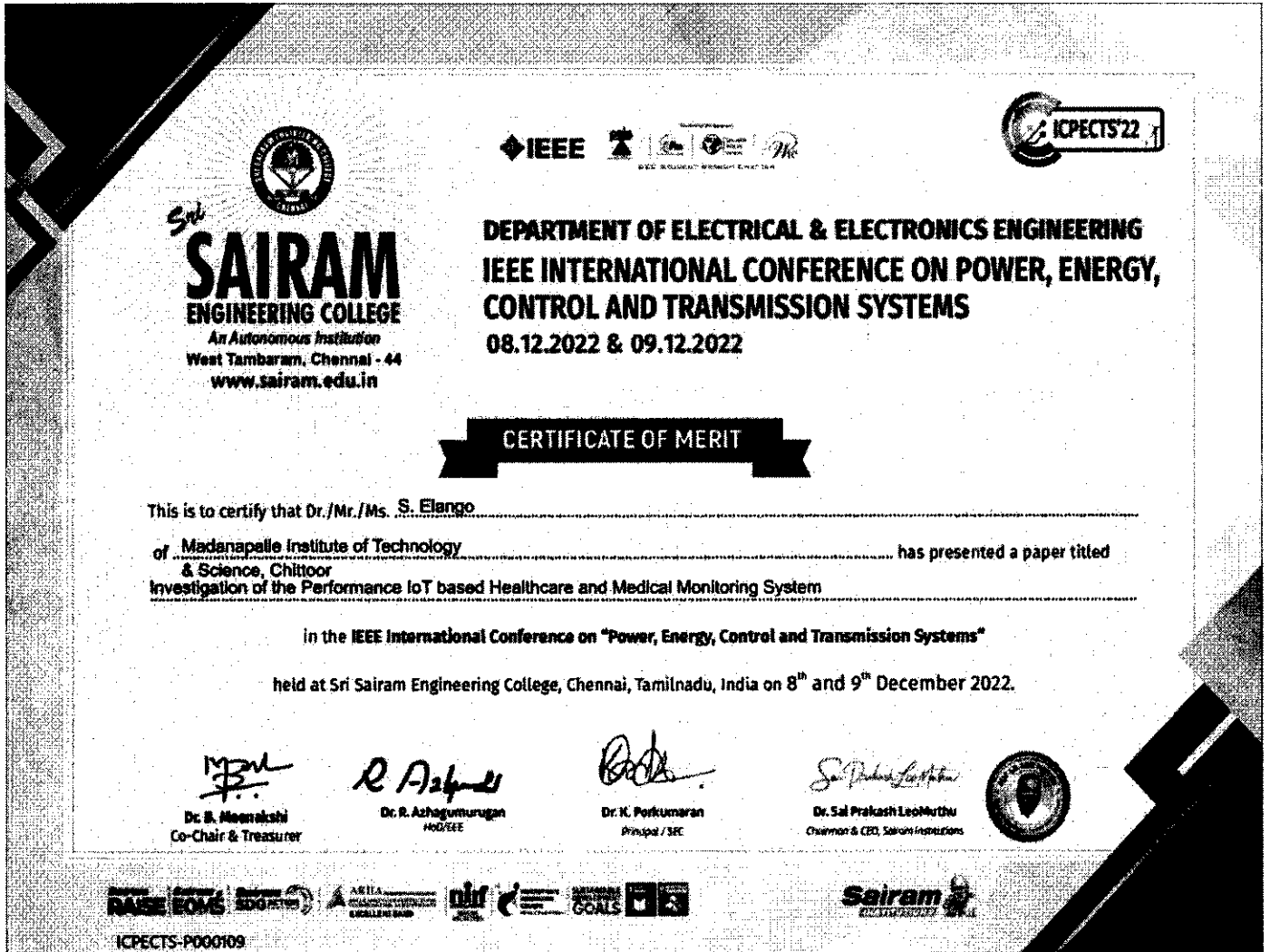
Currently, most of the approaches used to diagnose and classify skin diseases rely on imaging technology. However, they can also recognize the condition using various image processing techniques, such as segmentation, image transformation, and equalization. The images captured for these applications are then fed into various artificial intelligence systems, which are capable of analyzing and classifying the conditions. Some of these include Deep Learning, Convolutional Neural networks(CNN), and Back Propagation models [7]. Different loss functions are commonly used in this field, such as classification and discrepancy. The main plan is used by approach transfer

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Abstract— Medical engineering research has recently advanced significantly. The ability to accurately record a significant amount of medical data has increased because to advancements in measuring device technology, which has caused medical data to rise rapidly. With this backdrop, we will encounter a significant amount of data, and it is crucial to mine and use this enormous amount of data sensibly. By using an artificial intelligence reasoning engine to scan medical data, it is possible to compile user-generated keywords and instantly suggest relevant content to users. The decision tree algorithm is emphasized as one of the main technologies to implement data mining in this research, and it also explores how data mining technology is used in clinical medical diagnosis mining and analysis.

Keywords—Machine learning, Data mining, Diagnosis , Medical Data, Medical reasoning, Storage

I. INTRODUCTION

The ability to generate and gather data from all spheres of life has significantly improved with the development and widespread adoption of computer application technology, and the volume of data is growing daily. A significant volume of data is referred to as "rich in data but poor in information" due to the abundance of data and the necessity for sophisticated data analysis tools.[1]It is normal practice for hospitals to maintain medical records on computers due to the growing use of computer applications in medicine. The information gathered by hospitals is accurate patient information. Amount of information the after summary is really long. How to filter and analyse large amounts of data, such as clinical diagnosis and treatment, financial data, etc., to help identify potential issues in medical business and management [2].As a result, the era of big data began. People can now fully comprehend the exact details of data, which is a significant advancement in data mastery. As a result, more and more academics are focusing on how to pick the best data mining techniques to examine these medical decision tables and look for the most crucial symptom combination linked to diseases.

The methods used to acquire resources for search engines today are blind. Because of the limitations of the current algorithms, we frequently receive a large amount of useless data, which reduces search efficiency and precision. Any new reasoning strategy can be simply maintained in the reasoning system after the introduction of the reasoning strategy model in intelligent systems by inheriting the base strategy, reloading associated functions, or supplementing the already-existing base strategy when it is added [3].A number of concepts and techniques, such as artificial intelligence-based abstract modelling (or reasoning extraction The automatic learning reasoning system is implemented using rules), operating interface based on a number of third-party restrictions, uncertain reasoning operations, etc.The system automatically adjusts the inference engine system based on artificial intelligence (including gain and attenuation), which not only significantly lowers the maintenance cost of background personnel but also enhances user experience and enables medical personnel to access better and more accurate services.

II. DATA MINING AND ARTIFICIAL INTELLIGENCE ENGINES

A. machine learning system

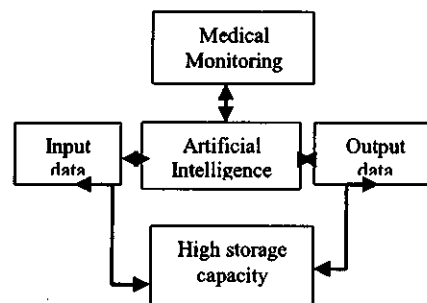
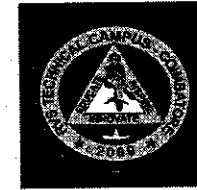
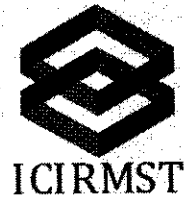


Fig 1 Artificial Intelligence In medical data mining



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DETECTING MALICIOUS NODE IN IOT BASED WIRELESS SENSOR NETWORK USING BLOCKCHAIN

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Madanapalle, Andhra Pradesh, India.*

Abstract

Wireless sensor networks (WSNs) are being increasingly used in various applications, including the Internet of Things (IoT). WSNs consist of many small sensor nodes that are distributed throughout an environment and are used to gather data about various parameters such as temperature, humidity, and air quality. However, WSNs are vulnerable to attacks by malicious nodes, which can compromise the security of the network. To address this issue, we have proposed using blockchain technology to enhance the security of WSNs. The proposed blockchain-based secure localization schemes is called Secure Localization against Malicious Nodes (SLAMN). In this scheme, a blockchain-based distributed ledger is used to store the location information of the sensor nodes. Each sensor node periodically broadcasts its location information to the neighbouring nodes, which then verify the information and add it to the blockchain. To prevent malicious nodes from tampering with the location information, SLAMN uses a consensus mechanism based on proof-of-work (PoW). Each node must solve a computational puzzle to add a new block to the blockchain. This ensures that only nodes that have a significant amount of computing power can add new blocks, making it difficult for malicious nodes to tamper with the information. SLAMN also uses a trust-based mechanism to ensure that only trustworthy nodes are allowed to participate in the consensus process. Each node maintains a trust score based on its behaviour in the network. Nodes with higher trust scores are given priority in the consensus process. Overall, the SLAMN scheme provides a secure and efficient method for localizing sensor nodes in WSNs, even in the presence of malicious nodes. By using blockchain technology and a consensus mechanism based on PoW, SLAMN ensures the integrity and authenticity of the location information stored in the distributed ledger.

IMPROVEMENT OF VISUALIZATION OF COLOR IMAGES BY SCALING THE DC COEFFICIENTS

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^{1,2,3}Assistant Professor, Department of Computer Science & Engineering,
Madanapalle Institute of Technology & Science, Madanapalle – Andhra Pradesh.

Abstract

The images have various colour illuminates and densities. Our New proposed system presents a new fashion for colour improvement in the compressed sphere. The proposed fashion is simple but more effective than some of the being ways reported before. The novelty lies in this case in its treatment of the polychromatic factors, while former ways treated only the luminance element. The results of all former ways along with that of the proposed one are compared with respect to those attained by applying a spatial sphere colour improvement fashion that appears to give veritably good improvement. The proposed fashion, computationally more effective than the spatial sphere grounded system, is set up to give better improvement compared to other compressed sphere grounded approaches. The above method can work well on all compressed images as well as it is very effective on medical images too.

SMART HEALTHCARE MONITORING SYSTEM USING INTERNET OF THINGS

R Nidhya¹, R Kalpana², G N Vivekananda³

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Abstract

The Internet of Things (IoT) has revolutionized the healthcare industry by enabling the development of smart patient health monitoring systems. These systems are capable of collecting real-time data on a patient's health parameters and transmitting this information to healthcare professionals for analysis and diagnosis. This paper proposes an IoT-based smart patient health monitoring system that utilizes various sensors to collect data on the patient's vital signs such as blood pressure, heart rate, temperature, and oxygen saturation. The data is then transmitted wirelessly to a cloud-based platform for analysis and visualization. The proposed system incorporates machine learning algorithms to predict potential health risks based on the patient's historical data. The system also includes an alert mechanism that notifies healthcare professionals in case of any abnormal readings, allowing them to take immediate action and provide timely care. The smart patient health monitoring system also includes a user-friendly mobile application that allows patients to view their health data in real-time and provides them with personalized health recommendations. The application also enables patients to connect with healthcare professionals for virtual consultations and medical advice. The proposed IoT-based smart patient health monitoring system has the potential to improve patient outcomes by enabling early detection of potential health risks, providing timely care, and empowering patients to take control of their health.

ABSTRACT

In general, we have the fingerprint unlock to our mobiles in the display itself. We are using the speed dial in the calling app to call easily. Based on this, the project is used to be done. The fingerprint of every finger is unique, and it will not match any other fingerprint in the world. Taking this as a key, we register each finger of the user to a phone number. The project is taken from the base of the speed dial system in the mobile phone. The speed dial system is used for opening the app and the user should hold the number registered number in the keypad on the mobile. The major drawback of the speed dial system is it takes time to dial a number in emergencies. This can be replaced with the "fingerprint dial". The project makes the user call a phone number with his/her fingerprint. When the user places his finger on the fingerprint sensor, the call procedures to the respective number registered with a finger. This can be used in emergencies and for the important persons that we frequently used to call. We can add emergency numbers like 100,104,108 etc. to some of the user's fingerprints and make a call easily in the emergencies.

Predicting Diseases Using Facial Features with Deep Learning Algorithm

Dr.Nidhya R Professor, Department of of CSE, Madanapalle Institute of Technology and Science, Madanapalle, AP, India	Ghousia Banu S UG Scholar, Department of of CSE, Madanapalle Institute of Technology and Science, Madanapalle, AP, India	Bramatha Reddy K UG Scholar, Department of of CSE, Madanapalle Institute of Technology and Science, Madanapalle, AP, India	Gayathri S UG Scholar, Department of of CSE, Madanapalle Institute of Technology and Science, Madanapalle, AP, India	Keerthana A UG Scholar, Department of of CSE, Madanapalle Institute of Technology and Science, Madanapalle, AP India
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ABSTRACT

Based on the reports of the World Health Organization (WHO) 2% to 5% of kids are born with genetic disorders around the world. Genetic anarchy is a pathosis due to abnormalities in DNA or genome, ancient geneticists found that there exists a relationship between the facial features of a disordered person and a particular genetic anarchy. The main motive of the project is to determine the probability of detailing diseases from face images using DTL (DeepTransferLearning) technologies. In the present paper, we suggest a model by applying DL(Deep Learning) techniques like a mobileNet for face recognition from images and deep transfer learning for extracting facial features from image to detect major genetic anarchy like Beta-thalassemia, Down syndrome, Leprosy, and Hypothyroidism using a small dataset. In general, the collection of datasets of facial images related to particular genetic anarchy is costlier, difficult, and unethical because of private data treatment. Hence, the datasets for this project are smaller as compared to the traditional datasets used for ML(Machine Learning) projects. With the help of the CNN technique of DL the accuracy can be reached up to 92%. In addition, a web

Brain Tumor Detection from MRI Images Using CNN

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Pradesh, India.

ABSTRACT

Detection and classification of brain tumors are important to better understand their mechanism. Early diagnosis of brain tumors reduces the risk of losing control over our health and it is an essential task in medical work to find out whether the tumor can potentially become cancerous. The project "Brain Tumor Detection Using MRI Images" is aimed at developing a machine learning (ML) based approach for the automatic detection of brain tumors from magnetic resonance imaging (MRI) scans. The proposed solution will utilize a deep learning architecture that employs convolutional neural networks (CNNs) for feature extraction and classification. The dataset used for training and testing the model will consist of MRI images of brain tumors, with ground truth labels provided by expert radiologists. The developed system will be evaluated using standard metrics such as accuracy, sensitivity, specificity, and F1 score. The results will be compared to existing methods for brain tumor detection to demonstrate the effectiveness and potential clinical utility of the proposed approach. Overall, the project has the potential to contribute to the development of a more efficient and accurate method for the early detection of brain tumors, which can aid in timely diagnosis and treatment planning. In the proposed CNN model, we observed the average accuracy value on the training data is 98%, with an average loss value of 0.14181. However, the findings on the test data show a significant difference: the average accuracy value on the test data is 90%, with an average loss value of 0.44037.

210. EMOTION BASED MUSIC RECOMMENDATION SYSTEM USING CNN

Dr.D.J. J Ashpin Pabi¹, P. Bhavani², M. Bharathi³, J.S. Deepa Chandrika⁴, 22S. Jasmeen⁵
Assistant Professor¹, UG Students^{2,3,4,5}, Computer Science and Engineering^{1,2,3,4,5}
^{1,2,3,4,5} Madanapalle Institute of Technology & Science, Madanapalle, Andhra Pradesh, India

Now a days, people are greatly influenced by the music. Everyone wants to listen to the music that suits their personal tastes and mood based on their current situation. Users constantly need to manually browse the music and construct a playlist or songs based on the mood of the user. The suggested project, which creates a music playlist depending on users' current mood, is quite effective. The best way of approach is to determine a person's present or current mood is through their facial expressions. This project aims to use facial expressions to propose songs to users based on their mood. Webcams are used to capture facial expressions, which are then fed into a learning algorithm to determine the most likely emotion. When an emotion is detected, the algorithm recommends a song for that emotion. After CNN has identified the user's sentiment, the Music Player uses that information to create a song that matches that feeling. Index Terms: Convolutional Neural Networks, Face Detection, Cascade Classifier, Face Expressions, Music, Sad, Angry, Happy.



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


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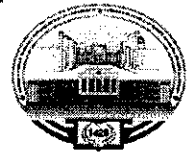

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


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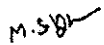
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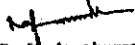
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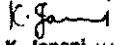
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
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
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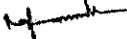
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1	Mr. Muthugurunathan. G	Dhamodaran S, Shahanawaj Ahamad, J.V.N. Ramesh, G. Muthugurunathan, Manikandan K, Digvijay Pandey.	Food Quality Assessment Using Image Processing Technique	ISBN13: 9781668486184 ISBN10: 1668486180	International	Scopus	-	June 2023	10.4018/978-1-6684-8618-4	MIT S	2022-23
2	Dr.R.Sudhakar	Arya Surendran, M.Bommy	A Review of 5G Technology and Applications	ISBN: 978-981-18-7125-2	RM Research International Private Ltd publisher	Scopus	238-246	May 2023(Accepted)	ISBN: 978-981-18-7125-2	MIT S	2022-23
3	Dr R Nidhya	Dr R Nidhya	"Tele-Healthcare Applications of Artificial Intelligence and Soft Computing Techniques"	9.781E+12	Scrivener publishing, Wiley	Scopus		Jul-22	10.1002/9781119841937	MIT S	2022-23
4	Dr R Nidhya	Dr R Nidhya	An Efficient IoT Framework for Patient Monitoring and Predicting Heart Disease Based on Machine Learning Algorithms", Tele-Healthcare Applications of Artificial Intelligence and Soft Computing Techniques, Scrivener publishing.	9.781E+12	Scrivener publishing, Wiley	Scopus	ch8, Pg.No: 179-200	Jul-22	10.1002/9781119841937	MIT S	2022-23

5	Dr R Nidhya	Dr R Nidhya	Autism Screening Tools With Machine Learning and Deep Learning Methods: A Review", Tele-Healthcare Applications of Artificial Intelligence and Soft Computing	9.781E+12	Scrivener publishing, Wiley	Scopus	ch10, Pg.No: 221-247,	Jul-22	9.781E+12	MITS	2022-23
6	Dr.G.ArunKumar	Dr.G.ArunKumar	Internet of Things and Machine Learning for Transportation System Using Adaptive Enhanced K	Accepted	CRC Press Taylor and Francis Group Florida USA	Scopus	ch8, Pg.No: 179-200	Dec, 2022	Accepted	MITS	2022-23

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CHAPTER - 19

A Review of 5G Technology and Applications

Dr. R. Sudhakar¹, Arya Surendran², Mrs. M. Bommy³
and Ms. Gopika Venu⁴

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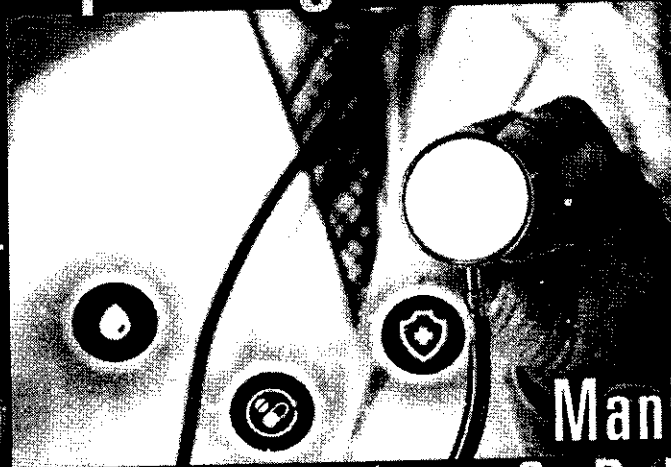
Abstract:

The fifth generation of wireless technology, is the latest advancement in telecommunications systems. It builds upon the foundations laid by its predecessors, such as 3G and 4G, and introduces significant improvements in terms of speed, capacity, latency, and connectivity. 5G technology promises to revolutionize various sectors, including communication, transportation, healthcare, entertainment, and more. One of the key features of 5G is its remarkable speed. It offers significantly faster data transmission rates compared to previous generations, reaching up to 10 gigabits per second (Gbps). This ultra-fast speed allows for quick downloads and seamless streaming of high-definition content. With 5G, users can experience incredibly low latency, meaning there is minimal delay between sending and receiving data, resulting in a more responsive and real-time experience. Another crucial aspect of 5G is its increased network capacity. This technology has the potential to support a massive number of connected devices simultaneously. With the Internet of Things (IoT) becoming more prevalent, 5G can handle the vast network traffic generated by various smart devices, ranging from smartphones and tablets to smart homes, autonomous vehicles, and industrial sensors. This enhanced capacity opens up new opportunities for innovation and connectivity. Furthermore, 5G offers improved reliability and network coverage. It utilizes advanced technologies such as beamforming and massive MIMO (Multiple-Input Multiple-Output) to optimize signal strength and reduce interference, leading to a more stable and consistent connection. Additionally, 5G networks can operate on higher frequency bands,

Artificial Intelligence and Soft Computing for Industrial Transformation

TELE- HEALTHCARE

Applications of Artificial
Intelligence and Soft
Computing Techniques



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R. Nidhya
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S. Balamurugan

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An Efficient IoT Framework for Patient Monitoring and Predicting Heart Disease Based on Machine Learning Algorithms

Shanthi S.^{1*}, Nidhya R.², Uma Perumal³ and Manish Kumar⁴

¹Department of CSE, Malla Reddy College of Engineering and Technology, Hyderabad, Telangana, India

²Department of CSE, Madanapalle Institute of Technology & Science, Andhra Pradesh, India,

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Abstract

One of the major technologies, which support healthcare industry and its applications in the current scenario, is the Internet of Things (IoT). The IoT plays a vital role in the field of health services by interconnecting various resources involved in the medical field and provides more secure, smart and effective services to the general community. Many advanced sensors are available right now in the market that can be wearable or can be implanted into the human body and the purpose of which is to observe the health of the patients continuously, collect their data and transfer the patient's health-related data to the medical server. Machine learning along with IoT is being extensively used in the field of health sector and medical diagnosis. With the improvement in the technology, we could predict the diseases beforehand and can able to predict the seriousness of the problem. The IoT framework is used for collecting the heartbeat, blood pressure, and temperature of a person via the sensor deployed in the human body and using machine learning algorithm to predict the heart disease of a particular person and also to analyze the current health condition of a particular person. Cleveland heart diseases data set is being used here for predicting the heart disease and the collected patient information is used for finding out the prediction of diseases. Comparison of four

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X Internet of Things and Machine Learning for Transportation System Using Adaptive Enhanced K-Nearest Neighbor Algorithm

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