

MIFRATECH

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IMAGE PROCESSING TITLES AND ABSTRACTS 2020-21

PROJECT TITLE	Eye controlled mouse
PROJECT ID	SHIP001
DOMAIN	Image Processing with Python
ABSTRACT	<p>Recently there has been a growing interest in developing natural interaction between human and computer. Several studies for human-computer interaction in universal computing are introduced. [1] The vision-based interface technique extracts motion information without any high cost equipments from an input video image. Thus, vision-based approach is taken into account an effective technique to develop human computer interface systems. For vision-based human computer interaction, eye tracking is a hot issue. Eye tracking research is distinguished by the emergency of interactive applications. However, to develop a vision-based multimodal human computer interface system, an eye tracking and their recognition is done. Real- time eye input has been used most frequently for disabled users, who can use only their eyes for input.</p>

PROJECT TITLE	AI BASED HAND DRAWN ENGINEERING SYMBOLS CLASSIFICATION AND RECOGNITION
PROJECT ID	SHIP002
DOMAIN	Image Processing with Python
ABSTRACT	<ul style="list-style-type: none"> ➤ There is increasing interest in building systems that can automatically interpret hand-drawn sketches. ➤ However, many challenges remain in terms of recognition accuracy, robustness to different drawing styles, and ability to generalize across multiple domains. ➤ Thus, in this project we propose a new method using Artificial Neural Network (ANN) to make a machine that can directly read the electrical symbols from a hand drawn circuit image.

PROJECT TITLE	Leaf Disease Detection and Recommendation of Pesticides using Convolution Neural Network
PROJECT ID	SHIP003
DOMAIN	Image Processing with Python
ABSTRACT	<p>Crop production problems are common in India which severely effect rural farmers, agriculture sector and the country's economy as a whole. In Crops leaf plays an important role as it gives information about the quantity and quality of agriculture yield in advance depending upon the condition of leaf. In this project we proposed the system which works on preprocessing, feature extraction of leaf images from plant village dataset followed by convolution neural network for classification of disease and recommending Pesticides using Tensor flow technology .Agriculture is one field which has a high impact on life and economic status of human beings. Improper management leads to loss in agricultural products. Farmers lack the knowledge of disease and hence they produce less production. Kisan call centers are available but do not offer service 24*7 and sometimes communication too fail. Farmers are unable to explain disease properly on call need to analysis the image of affected area of disease. Though,</p>

	<p>images and videos of crops provide better view and agro scientists can provide a better solution to resolve the issues related to healthy crop yet it not been informed to farmers. It is required to note that if the productivity of the crop is not healthy, it has high risk of providing good and healthy nutrition. Due to the improvement and development in technology where devices are smart enough to recognize and detect plant diseases. Recognizing illness can prompt faster treatment in order to lessen the negative impacts on harvest.</p>
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PROJECT TITLE	Real Time Drowsiness Detection using Eye Blink Monitoring
PROJECT ID	SHIP004
DOMAIN	Image Processing with Python
ABSTRACT	<p>According to analysis reports on road accidents of recent years, it's renowned that the main cause of road accidents resulting in deaths, severe injuries and monetary losses, is due to a drowsy or a sleepy driver. Drowsy state may be caused by lack of sleep, medication, drugs or driving continuously for long time period. An increase rate of roadside accidents caused due to drowsiness during driving indicates a need of a system that detects such state of a driver and alerts him prior to the occurrence of any accident. During the recent years, many researchers have shown interest in drowsiness detection. Their approaches basically monitor either physiological or behavioral characteristics related to the driver or the measures related to the vehicle being used. A literature survey summarizing some of the recent techniques proposed in this area is provided. To deal with this problem we propose an eye blink monitoring algorithm that uses eye feature points to determine the open or closed state of the eye and activate an alarm if the driver is drowsy. Detailed experimental findings are also presented to highlight the strengths and weaknesses of our technique. An accuracy of 94% has been recorded for the proposed methodology.</p>

PROJECT TITLE	License Plate Recognition
PROJECT ID	SHIP005
DOMAIN	Image Processing with Python
ABSTRACT	<p>VEHICLE plate detection and recognition appear in vast variety of applications, including travel time estimation, car counting on highways, traffic violations detection, and surveillance applications. Traffic monitoring cameras are mounted four to seven meters above the street level. Plate recognition range, where the cameras are able to capture the vehicles plates with sufficient resolution, starts from 20 to more than 50 meters away from the camera location. This range depends on the camera resolution and the lens mounted on the camera. At these heights and distances, vehicles plates are not as clearly visible as in other applications such as toll and parking fee payment systems.</p> <p>In many countries, a color image of the violation scene must be stored as an evidence. For such purposes, a color camera is located beside the monochrome camera. Color cameras can be deployed alone in places where controlled lighting conditions exist, e.g., in tunnels. Since a single camera is sufficient in these cases the final cost of the system is reduced. Such systems can also be employed in cases where violations are considered only in the daylight. For example, congestion charging systems need to detect the vehicles that enter a specific zone during specific hours. Basically, the License Plate Recognition (LPR) process is divided into three main parts: Plate Detection, Character Segmentation, and Character Recognition. Each of these parts plays</p>

	<p>an important role in the final accuracy. Many problems such as size variations, viewing angle, low contrast plates, vehicles high speed and time consuming algorithms have prevented researchers from introducing a single class of algorithms to solve the problem. There have been, however, many algorithms proposed for each part.</p>
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PROJECT TITLE	Detection of brain tumor from MRI images and predicting the best therapy
PROJECT ID	SHIP006
DOMAIN	Image Processing with Python
ABSTRACT	<p>The tumour is basically an uncontrolled growth of cancerous cells in any part of the body, whereas a brain tumour is an uncontrolled growth of cancerous cells in the brain. A brain tumour can be benign or malignant. The benign brain tumour has a uniformity in structure and does not contain active (cancer) cells, whereas malignant brain tumors have a nonuniformity (heterogeneous) in structure and contain active cells. The gliomas and meningiomas are the examples of low-grade tumors, classified as benign tumors and glioblastoma and astrocytomas are a class of high-grade tumors, classified as malignant tumors. This Project detects of brain tumor from MRI images and predicting the best therapy</p>

PROJECT TITLE	Emotion recognition
PROJECT ID	SHIP007
DOMAIN	Image Processing with Python
ABSTRACT	Humans have always had the innate ability to recognize and distinguish between faces. Now computers are able to do the same. This opens up tons of applications. Face detection and Recognition can be used to improve access and security like the latest Apple Iphone does (see gif below), allow payments to be processed without physical cards — iphone does this too!, enable criminal identification and allow personalized healthcare and other services. Face detection and recognition is a heavily researched topic and there are tons of resources online. We have tried multiple open source projects to find the ones that are simplest to implement while being accurate. We have also created a pipeline for detection, recognition and emotion understanding on any input image

PROJECT TITLE	Age and gender identification
PROJECT ID	SHIP008
DOMAIN	Image Processing with Python
ABSTRACT	In this Python Project, we will use Deep Learning to accurately identify the gender and age of a person from a single image of a face. The predicted gender may be one of 'Male' and 'Female', and the predicted age may be one of the following ranges- (0 – 2), (4 – 6), (8 – 12), (15 – 20), (25 – 32), (38 – 43), (48 – 53), (60 – 100) (8 nodes in the final softmax layer). It is very difficult to accurately guess an exact age from a single image because of factors like makeup, lighting, obstructions, and facial expressions. And so, we make this a classification problem instead of making it one of regression.

PROJECT TITLE	face mask detection
PROJECT ID	SHIP009
DOMAIN	Image Processing with Python
ABSTRACT	In this project, we have developed a deep learning model for face mask detection using Python, Keras, and OpenCV. We developed the face mask detector model for detecting whether person is wearing a mask or not. Training the model is the first part of this project and testing using webcam using OpenCV is the second part.

PROJECT TITLE	face recognition based attendance system
PROJECT ID	SHIP010
DOMAIN	Image Processing with Python
ABSTRACT	Attendance of students in a large classroom is hard to be handled by the traditional system, as it is time-consuming and has a high probability of error during the process of inputting data into the computer. This paper proposed automated attendance marking system using face recognition technique. The system deployed Haar cascade to find the positive and negative of the face and eigenface algorithm for face recognition by using python programming and OpenCV library. The proposed method using PCA to resolved the problems such as lightning of the images, noise from the camera, and the direction of the student faces. The attendance of the student was updated to the Excel sheet after student's face has been recognized.

PROJECT TITLE	instagram image classifier
PROJECT ID	SHIP011
DOMAIN	Image Processing with Python
ABSTRACT	<p>The growing popularity of social media has created a new medium for advertisers to promote their products. To reach the modern-day consumer, advertisers have turned toward referral marketing with top social media influencers acting as brand ambassadors. The current method of manually finding these individuals does not scale well to the growing demand of companies discovering the power of social media. We propose using convolutional neural networks (CNNs) for this task, focusing on Instagram. Our approach involves finetuning various pretrained models using new training sets of ImageNet and ImageNet + Instagram, and a validation set obtained through crowdsourcing labels for Instagram photos. Additionally, we experiment with data augmentations and network parameters. Our end-to-end system produces a list of top Instagram users judged to be the best brand ambassadors for products, given a set of predefined categories.</p>

PROJECT TITLE	jaundice detection
PROJECT ID	SHIP012
DOMAIN	Image Processing with Python
ABSTRACT	<p>By using image processing, the sclera region of the eyes was detected and the colour of the detected region was analyzed to confirm the jaundice. Furthermore, based upon soft computing, the degree of severity of jaundice was calculated.</p>

PROJECT TITLE	Virtual Assistance
PROJECT ID	SHIP013
DOMAIN	Image Processing with Python
ABSTRACT	An AI personal assistant is a piece of software that understands verbal or written commands and completes task assigned by the client. It is an example of weak AI that is it can only execute and perform quest designed by the user.

PROJECT TITLE	WEED Classification
PROJECT ID	SHIP014
DOMAIN	Image Processing with Python
ABSTRACT	The identification and classification of weeds are of major technical and economical importance in the agricultural industry. To automate these activities, like in shape, color and texture, weed control system is feasible. The goal of this paper is to build a real-time, machine vision weed control system that can detect weed locations. The algorithm is developed to classify images into broad and narrow class for real-time selective herbicide application. The developed algorithm based on Edge Link Detector has been tested on weeds at various locations, which have shown that the algorithm to be very effectiveness in weed identification. Further the results show a very reliable performance on weeds under varying field conditions. The analysis of the results shows over 93 % classification accuracy over 240 sample images (broad, narrow and no or little weeds) with 100 samples from broad weeds, 100 samples from narrow weeds and the remaining 40 from no or little weeds.

PROJECT TITLE	Image Processing Techniques for Grading & Classification of Rice
PROJECT ID	SHIP015
DOMAIN	Image Processing with MATLAB
ABSTRACT	<p>A relatively faster computer vision system has been discussed to analyze and sort rice kernels. A series of measurements were done using image processing techniques on three varieties of Indian rice namely Markfed Supreme, Markfed Golden (export quality),Hafed Basmati. Area, perimeter, maximum length, maximum width, compactness and elongation were measured. Further, separating the rice varieties by their shape difference was examined. The computer vision system developed has been able to sort rice into sound, cracked, chalky, broken and damaged kernels with an accuracy ranging from 90-95%</p>

PROJECT TITLE	Unblurring the night before -Mechanism and model to refocus contextual content.
PROJECT ID	SHIP016
DOMAIN	Image Processing with MATLAB
ABSTRACT	<p>The image processing has become an important field of research in which we can get complete information about any image. One of the main problems in this research field is the quality of an image/Video. If we are able to recognize the shape of the objects clearly then that image is considered to be the sharper or more comprehensive image. The quality of image/video is degraded by the Blur -is a shape or area which cannot be seen clearly because it has no distinct outline or it is moving faster. Some of the main reasons for blur can be due to Camera shake, Out of focus and Object motion. Object motion blur is caused by the relative motion between an object in the scene and the camera system during the exposure time. This type of blur generally occurs in capturing a fast-moving object</p>

	<p>or when a long exposure time is needed. Camera shake blur is induced by camera motion during the exposure period. This is particularly common in handheld photography. The imperfect focusing on the imaging system or different depths of a scene, the fields outside the focus field are defocused, giving rise to defocus blur, or out of focus blur .</p>
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PROJECT TITLE	Pseudo code to Source code Translation
PROJECT ID	SHIP017
DOMAIN	Image Processing with MATLAB
ABSTRACT	<ul style="list-style-type: none"> ➤ Pseudo code is an informal way of programming description that does not require any strict programming language syntax or underlying technology considerations. ➤ Today, everything seems to be digital, driven by software. Advances in software are powering rapid changes in technology, impacting us as individuals and our society. ➤ The main aim of our system is to convert pseudo code to specific source code using NLP technology.

PROJECT TITLE	Automated Blood Cell Counting and Classification Using Image Processing
PROJECT ID	SHIP018
DOMAIN	Image Processing with MATLAB
ABSTRACT	<p>In this paper, we are proposing a method in which we incorporate the image analysis & classification algorithm with the manual counting method of blood cell which gives results comparable with the very sophisticated automated blood cell counters. Image acquiring is done with the help of manual blood counting slide, USB compatible microscope and store it in the</p>

	system or a computer for further processing. The stored image is processed through a software to enhance the quality of the image for accurate output data, which we compare with our known values and give an efficiency of the acquired output.
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PROJECT TITLE	DETECTION OF BRAIN TUMOR FROM MRI IMAGES AND PREDICTING THE BEST THERAPY(A SURVEY)
PROJECT ID	SHIP019
DOMAIN	Image Processing with MATLAB
ABSTRACT	<p>A brain tumor is a growth of abnormal cells that has formed in the brain. Some brain tumors are cancerous (malignant), while others are not (non-malignant). Most Research in developed countries show that the number of people who have brain tumors were died due to the fact of inaccurate detection. Generally, CT scan or MRI that is directed into intracranial cavity produces a complete image of brain. This image is visually examined by the physician for detection & diagnosis of brain tumor. However this method of detection resists the accurate determination of stage & size of tumor.</p> <p>In recent times, the introduction of information technology and e-health care system in the medical field helps clinical experts to provide better health care to the patient. This study addresses the problems of segmentation of abnormal brain tissues and normal tissues such as gray matter (GM), white matter (WM), and cerebrospinal fluid (CSF) from magnetic resonance (MR) images. Firstly, brain tumor is detected using the MRI scan further biomarkers are used for further treatment.</p>

PROJECT TITLE	Detecting Breast Cancer using Neural Nets
PROJECT ID	SHIP020
DOMAIN	Image Processing with MATLAB
ABSTRACT	<p>In India and over the world, Cancer has become a deadly disease and more and more people are suffering from Cancer and a survey says one in every 30 women suffer from this disease in their lifetime and so basically the project was first thought of because of the increase in cases of breast cancer and one thing which is very important that if we can detect the Cancer at an early stage then there is an increased chances of it getting cured. So this project lays a foundation in making the detection of the cancer automated so that more and more people can get it diagnosed early so as get cured.</p>

PROJECT TITLE	A Vision System for Detection and Tracking of Stop-Lines
PROJECT ID	SHIP021
DOMAIN	Image Processing with MATLAB
ABSTRACT	<p>This paper presents a computer vision algorithm that detects, by analyzing lanemarking detection results, stop-lines and tracks, using an unscented Kalman filter, the detected stop-line over time. To detect lateral and longitudinal lane-markings, our method applies a spatial filter emphasizing the intensity contrast between lanemarking pixels and their neighboring pixels. We then examine the detected lanemarkings to identify perpendicular, geometry layouts between longitudinal and lateral lane-markings for stop-line detection. To provide reliable stop-line recognition, we developed an unscented Kalman filter to track the detected stop-line over frames. Through the testings with real-world, busy urban street videos, our method demonstrated promising results, in terms of the accuracy of the initial detection accuracy and the reliability of the tracking.</p>

PROJECT TITLE	Affective EEG and Facial Features Based Person Identification Using the Deep Learning Approach
PROJECT ID	SHIP022
DOMAIN	Image Processing with MATLAB
ABSTRACT	<p>The aim is to recognize person identity based on brain activity, measured by EEG signals. Recently, classification from EEG data has attracted much attention with the rapid development of machine learning algorithms, and various real-world applications of brain-computer interface for normal people. Until now, researchers had little understanding of the details of relationship between different emotional states and various EEG features. With the help of EEG-based human identification, the computer can have a look inside user's head to observe user's mental state. We systematically perform feature extraction, feature selection, feature smoothing and pattern classification methods in the process. The best features extracted are specified in detail and their effectiveness is proven by classification results.</p> <p>Human identification based on Face recognition is one of the latest technology being studied area in biometric as it has wide area of applications. But Face detection is one of the challenging problems in Image processing. The basic aim of face detection is determine if there is any face in an image & then locate position of a face in an image. Evidently face detection is the first step towards creating an automated system which may involve other face processing. The deep learning neural network needs to be created & trained with training set of faces & non-faces. All results are implemented in MATLAB 2013 environment. Database is collected for different persons from online EEG data base which is meant for research.</p>

PROJECT TITLE	Human action recognition using support vector machines and 3D convolutional neural networks
PROJECT ID	SHIP023
DOMAIN	Image Processing with MATLAB
ABSTRACT	<p>Recently, deep learning approach has been used widely in order to enhance the recognition accuracy with different application areas. In this paper, both of deep convolutional neural networks (CNN) and support vector machines approach were employed in human action recognition task. Firstly, 3D CNN approach was used to extract spatial and temporal features from adjacent video frames. Then, support vector machines approach was used in order to classify each instance based on previously extracted features. Both of the number of CNN layers and the resolution of the input frames were reduced to meet the limited memory constraints. The proposed architecture was trained and evaluated on KTH action recognition dataset and achieved a good performance.</p>

PROJECT TITLE	Lane detection for Autonomous Vehicle
PROJECT ID	SHIP024
DOMAIN	Image Processing with MATLAB

ABSTRACT	<p>The autonomous vehicle will have a vision-based system. Computer vision algorithm that detects and tracks the boundaries of drivable regions appearing on input images. This makes the vehicle make use of dynamic input, frame-by-frame. Hence, by combining it with other methods and functions like Hough transform and canny edge detection help us reduce the error rate and give better outputs. Even though computer vision is used in industry, recent development of precision requirements, due to regulations, computer vision has more importance and has become obligation in the industry.</p>
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PROJECT TITLE	Micro calcification detection in digital mammography
PROJECT ID	SHIP025
DOMAIN	Image Processing with MATLAB
ABSTRACT	<p>Mammography is the most efficient modality for detection of breast cancer at early stage. Microcalcifications are tiny bright spots in mammograms and can often get missed by the radiologist during diagnosis. The presence of microcalcification clusters in mammograms can act as an early sign of breast cancer. This paper presents a completely region of interest (ROI) system for detection of microcalcification clusters in mammograms. Blurry masking is used as a preprocessing step which enhances the contrast between microcalcifications and the background. The pre-processed image is threshold and various shape and intensity based features are extracted. Neural Networks(NN) classifier is used to reduce the false positives while preserving the true microcalcification clusters</p>

PROJECT TITLE	MULTILEVEL AUTHENTICATION USING OTP, QR CODE & FACIAL RECOGNITION USING DEEP NEURAL NETWORK
PROJECT ID	SHIP026
DOMAIN	Image Processing with MATLAB
ABSTRACT	<p>Today, People can do almost everything online (banking, shopping, storing and sharing personal information). To access these services in the most secured manner is very critical. Many authentication methods are available such as username and password, barcode, finger print and face detection. But these methods have some advantages as well as disadvantages. Username and password are not providing security/ To overcome all the drawbacks the QR code along with Face recognition and OTP are introduced. QR code has many applications. QR codes are used in banking transactions for security; it provides more security than barcode. The QR code stores complex password. QR code can be scanned using smart phones. When a user opts for online banking transaction he opens the bank website. On the same page, QR code is displayed after registration; user can scan the QR code image with a scanner. A string is generated after scanning. For authenticating user, IEMI no. of phone is used. The multilevel security is used in this application; therefore this system is very secured method for online transaction than existing system.</p>

PROJECT TITLE	Pansharpening scheme using filtering in two-dimensional discrete fractional Fourier transform
PROJECT ID	SHIP027
DOMAIN	Image Processing with MATLAB
ABSTRACT	<p>The aim of the pansharpening scheme is to improve the spatial information of multispectral images using the panchromatic (PAN) image. In this study, a novel pansharpening scheme based on two-dimensional discrete fractional Fourier transform (2D-DFRFT) is proposed. In the proposed scheme, PAN and intensity images are transformed using 2D-DFRFT and filtered by highpass filters, respectively. The filtered images are inverse transformed and further used to generate the pansharpened image using appropriate fusion rule. The additional degree of freedom in terms of its angle parameters associated with the 2D-DFRFT is exploited for obtaining better results in the proposed pansharpening scheme. Simulation results of the proposed technique carried out in MATLAB are presented for IKONOS and GeoEye-1 satellite images and compared with existing fusion methods in terms of both visual observation and quality metrics. It is seen that the proposed pansharpening scheme has improved spectral and spatial resolution as compared to the existing schemes.</p>

PROJECT TITLE	High Speed Image De-hazing Method Based On Linear Transformation
PROJECT ID	SHIP028
DOMAIN	Image Processing with MATLAB

ABSTRACT	<ul style="list-style-type: none"> • Color model- Is a system for creating a full range of colors from a small set of primary colors. • The basics of Pre-Processing techniques - Image Filtering. • Determining the Dark Channel Prior- In most of the non-sky patches, at least one color channel has very low intensity at some pixels, which is called the dark channel prior (DCP). • To overcome the problem system proposed that will find out the High speed Image Dehazing Method Based on Linear Transformation.
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PROJECT TITLE	Image Compression using Fence-Pixel Decimation Technique
PROJECT ID	SHIP029
DOMAIN	Image Processing with MATLAB
ABSTRACT	<ul style="list-style-type: none"> • Recently researchers are challenging - oversampling followed by compression. • Implementation of a practical approach of pixel decimation. • Image is compressed and transmitted without any change to current image coding standards and systems.

PROJECT TITLE	Skin Disease Detection Using Image Processing with Data Mining and Deep Learning
PROJECT ID	SHIP030
DOMAIN	Image Processing with MATLAB
ABSTRACT	Skin diseases are hazardous and often contagious, especially

melanoma, eczema, and impetigo. These skin diseases can be cured if detected early. The fundamental problem with it is, only an expert dermatologist is able to detect and classify such disease. Sometimes, the doctors also fail to correctly classify the disease and hence provide inappropriate medications to the patient. Our paper proposes a skin disease detection method based on Image Processing and Deep Learning Techniques. Our system is mobile based so can be used even in remote areas. The patient needs to provide the image of the infected area and it is given as an input to the application. Image Processing and Deep Learning techniques process it and deliver the most accurate output. In this paper, we present a comparison of two different approaches for real-time skin disease detection algorithm based on accuracy. We have compared Support Vector Machine (SVM) and Convolutional Neural Networks (CNN). The results of real-time testing are presented.

PROJECT TITLE	Leaf Morphology Study Using Image Processing Techniques
PROJECT ID	SHIP031
DOMAIN	Image Processing with MATLAB
ABSTRACT	Leaf morphological characters are a useful visual guide for constructing relationships between different plants and between plants and their environment. However, extracting and analyzing these characters are carried out manually by botanists, which is a painstaking and time-consuming task. One way to accelerate and broaden the use of these characters is to automatically extract them directly from images. An indispensable step toward this goal is to automatically detect

	<p>leaf parts (petiole, blade, base, apex, rachis) since foliar characters are key descriptions about their shapes and thereby identify the leaf by its scientific name. In this paper we present a novel approach that addresses this problem. It is based on two types of symmetry: the first is local translational symmetry (for petiole, rachis detection). The second is local symmetry of depth indentations (for base and apex detection). The main advantage of this method is its accuracy and its robustness to shape variability. This is confirmed by the high rate of correct detections (more than 90%) obtained for a large number of leaf species. From a machine learning perspective, plant identification is a supervised classification problem. For species identification, the training phase comprises the analysis of images that have been independently and accurately identified as taxa and are now used to determine a classifier's parameters for providing maximum discrimination between these trained taxa. In the application phase, the trained classifier is then exposed to new images depicting unidentified specimens and is supposed to assign them to one of the trained taxa.</p>
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PROJECT TITLE	Megacities Transport Systems for Infrastructure Management
PROJECT ID	SHIP032
DOMAIN	Image Processing with MATLAB
ABSTRACT	<p>The proposed work of urban traffic congestions represent a major problem in the vast majority of world metropolis and the Intelligent Transport Systems are created to provide real time control and route guidance for the traffic participants, and to optimize the performance of traffic networks. The updated control and the adaptive control strategies are more and more frequently used due to their potential to reduce the delay in the intersections. New opportunities to control the traffic on street networks have been created due to the fast evolution of communications and computerized processing methods in the last decade. The role of urban traffic optimization is to both increase the efficiency of transport services and their capacity to respond to user requirements. This category of systems include information systems that disseminate information</p>

	<p>concerning the public transport schedule and the exact time-of-arrival of public transport assets, prices, routes, automatic trip tax collection systems, vehicle location systems for fleet management and safety system.</p> <p>The proposed work discusses issues of optimization of urban ground transport flows management and development of automatic information systems for transport infrastructure managing. Modern systems of monitoring and managing of urban transport infrastructure are analysed and their place in ensuring road traffic safety and stability is determined. Proposals for the improvement of dynamic artificial intelligence systems for the megacities transport infrastructure and urban transport flows management are devised.</p>
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PROJECT TITLE	Traffic violation control system
PROJECT ID	SHIP033
DOMAIN	Image Processing with MATLAB
ABSTRACT	<ul style="list-style-type: none"> • Road safety is often neglected by riders worldwide leading to accidents and deaths. • To address this issue, most countries have laws which mandate the use of helmets for two-wheeler riders. • In addition to the law, there is a significant proportion of the police force that discourages this behavior by issuing a traffic violation ticket. • As of now, this process is manual and tedious. This project aims to solve this problem by automating the process of detecting the riders who are riding without helmets and violate traffic rules. • Furthermore, the system also extracts the license plate so that it could be used to issue traffic violation tickets.

PROJECT TITLE	An Analysis of the Viola-Jones Face Detection Algorithm
PROJECT ID	SHIP034
DOMAIN	Image Processing with MATLAB
ABSTRACT	<p>In this article, we decipher the Viola-Jones algorithm, the first ever real-time face detection system. There are three ingredients working in concert to enable a fast and accurate detection: the integral image for feature computation, Adaboost for feature selection and an attentional cascade for efficient computational resource allocation. Here we propose a complete algorithmic description, a learning code and a learned face detector that can be applied to any color image. Since the Viola-Jones algorithm typically gives multiple detections, a post-processing step is also proposed to reduce detection redundancy using a robustness argument.</p>

PROJECT TITLE	bone cancer prediction
PROJECT ID	SHIP035
DOMAIN	Image Processing with MATLAB
ABSTRACT	<p>Cancer is a dangerous disease, which is caused because of unregulated cell growth. After many researches, almost 100 different types of cancer has been detected in human body. Out of these, one of the most widely spread is bone cancer, which leads to death. The detection of bone cancer is very critical and which has no anticipation. Presently, most of the study is done by using data mining methods and the image processing techniques for medical image analysis process. Malignant and benign tumors of bone in the foot have traditionally been characterized as rare, or at least unusual. Bone cancer is considered to be the most dangerous and often the cause of early death around the globe. Therefore, early detection of the bone cancer has become needed to cure the patient. Medical imaging is playing an imperative function in analysis and healing of disease and locating tumours and finding of</p>

	<p>cancerous cells in premature phase. We Proposed a system to detect bone cancer accurately from MRI images using matlab and our proposed system will also classify images as cancerous or non cancerous.</p>
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PROJECT TITLE	Fake Currency Identification
PROJECT ID	SHIP036
DOMAIN	Image Processing with MATLAB
ABSTRACT	<p>The advancement of color printing technology has increased the rate of fake currency note printing and duplicating the notes on a very large scale. Few years back, the printing could be done in a print house, but now anyone can print a currency note with maximum accuracy using a simple laser printer. As a result the issue of fake notes instead of the genuine ones has been increased very largely. India has been unfortunately cursed with the problems like corruption and black money .And counterfeit of currency notes is also a big problem to it. This leads to design of a system that detects the fake currency note in a less time and in a more efficient manner. The proposed system gives an approach to verify the Indian currency notes. Verification of currency note is done by the concepts of image processing. This article describes extraction of various features of Indian currency notes. MATLAB software is used to extract the features of the note. The proposed system has got advantages like simplicity and high performance speed. The result will predict whether the currency note is fake or not.</p>

PROJECT TITLE	Identification of Potholes
PROJECT ID	SHIP037
DOMAIN	Image Processing with MATLAB
ABSTRACT	<p>Potholes can generate damage such as flat tire and wheel damage, impact and damage of lower vehicle, vehicle collision, and major accidents. Thus, accurately and quickly</p>

	<p>detecting potholes is one of the important tasks for determining proper strategies in ITS (Intelligent Transportation System) service and road management system. Several efforts have been made for developing a technology which can automatically detect and recognize potholes. In this study, a pothole detection method based on two-dimensional (2D) images is proposed for improving the existing method and designing a pothole detection system to be applied to ITS service and road management system. For experiments, 2D road images that were collected by a survey vehicle in Korea were used and the performance of the proposed method was compared with that of the existing method for several conditions such as road, recording, and brightness. The results are promising, and the information extracted using the proposed method can be used, not only in determining the preliminary maintenance for a road management system and in taking immediate action for their repair and maintenance, but also in providing alert information of potholes to drivers as one of ITS services.</p>
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PROJECT TITLE	Tuberculosis
PROJECT ID	SHIP038
DOMAIN	Image Processing with MATLAB
ABSTRACT	<p>Tuberculosis is a major problem and rapidly spread disease in all over the world. Accurate diagnosis is the key to controlling the disease. Traditional methods like tuberculin skin test (TST), Acid fast staining produce results that are inaccurate or take more time to detect. This paper presents an automated approach to detect tuberculosis using chest radiographs. A chest radiographic image is chosen to detect tuberculosis. In the existing method, cavity detection, ribs and diaphragm elimination is difficult to examine tuberculosis in chest radiographs. To overcome the difficulties lung region is extracted by using registration based segmentation methods. Segmentation of lung regions is performed after the registration process to handle complex segmentation problems. The performance of our system is evaluated by using two datasets: Montgomery country (MC) and Japanese society of</p>

radiology (JSRT) dataset and compare the results with the existing method to determine the accurate results.



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