



Intelligence Artificier 2022 - 2023



Department of Artificial Intelligence & Data Science

VISION OF GENESIS AND FOUNDER



Late Babu Banarasi Das Ji (1912 - 1985) Genesis Ex Chief Minister Govt. of Uttar Pradesh To provide an open opportunity to the young generation for evolving their core competencies and to build their career as world class professionals with broad based foundation, in-depth knowledge & versatile personality to meet the challenges of Global Economy.



Dr. Akhilesh Das Gupta Founder MBA, LLB, Ph.D. Ex-MP (Rajya Sabha)

We not only make technocrats at BBD, we churn out citizens of the world, perfect in all respect, be it leadership, competence, confidence, communication, moral or knowledge.

TO OUR REVERED AND HON'BLE FOUNDER CHAIRPERSON SIR DR. AKHILESH DAS GUPTA

प्रेरकः सूचकश्वैव वाचको दर्शकस्तथा ।

There is no greater tribute to a guru than to maintain the high standards he lived by; Dr. Akhilesh Das Gupta's legacy is one such that will live on through his eminent students and through the beauty of his charitable work; There was an intensity that he brought to every movement and thought he expressed; An inspiring soul, a versatile genius, a noble teacher whose ideas will live forever with his charm.

शिक्षको बोधकश्चैव षडेते गुरवः स्मृताः ॥

MESSAGES



MRS. ALKA DAS GUPTA HON'BLE CHAIRPERSON BBD GROUP

Innovation requires passionate explorers who give proper transformation at the workplace. With an ever-changing global scenario, the key to success is responding to the complex and rapidly changing issues in the world of Artificial Intelligence. The Department of Artificial Intelligence & Data Science of ADGITM is always

making efforts to justify these points. We impart an education that is based on consciousness and we rear a breed of young minds that are bustling with self-confidence, motivation, and ever-ready to take up challenges. The campus, sports, and academic facilities all bear testimony to this effort. In order to promote an internationally acceptable education, our key focus has been on overall development.

Proficiency in computing technology has become essential for modern-day managers, business leaders, entrepreneurs, and other professionals. It is a welcome development. I look forward to Intelligence Artificielle 2023 setting a higher pedestal. I wish to Intelligence Artificielle editorial team a grand success!

SHRI VIRAJ SAGAR DAS HON'BLE PRESIDENT BBD GROUP

I feel so delighted to find that the path of creativity and innovation is consistently followed by the Department of Artificial Intelligence & Data Science. It always encourages its students to actively participate and compete in various competitions and events to show their abilities towards the new platforms of technology.



A great part of the magazine is the fact that it brings us a bouquet of topics which are of utmost relevance and interest to all. It is a great pleasure for me to get to know all the activities and achievements of the Department of Artificial Intelligence & Data Science of Dr. Akhilesh Das Gupta Institute of Technology & Management in the form of such an interactive read.

I convey my best wishes for the success of Intelligence Artificielle 2023.



SHRI S. N. GARG CHIEF EXECUTIVE OFFICER, ADGITM

Through the guidance of trained and inspired leaders, the students are taken across the gap of their present knowledge and experience and place data level of knowledge and competence that enables them to immediately step into the high standard of efficiency required in today's world of development. We aim to cultivate talents by closely nurturing them throughout the whole program.

We are unique in terms of our programs, academic structure and core values. Our students are our assets. We develop our students to open them up in front of global scholarly endeavor. While the whole world is running after chances, it is essential to create your own opportunity.

PROF. (DR.) SANJAY KUMAR DIRECTOR, ADGITM

In his book on becoming a Leader, Warren Bennis wrote, "No leader sets out to be a leader. People set out to live their lives, expressing themselves fully. When that expression is of value, they become leaders. So the point is not to become a leader. The point is to become yourself, to use yourself completely – all your skills, gifts and energies –in order to make your vision



manifest. You must withhold nothing. You, must, in sum, become the person you started out to be, and to enjoy the process of becoming."

We at Dr. Akhilesh Das Gupta Institute of Technology& Management believe in helping students to manifest their vision completely. How do we do this? We offer a rigorous education program rooted in all forms of practice, coupled with a vast array of electives and opportunities that come from our position of being affiliated to a major university. We give you the tools to continue learning and growing long after you leave our doors; we create opportunities for internships and experiences that broaden your horizons. I take this opportunity to express the fact that every effort is made to improve the existing best services to bring out the best for the welfare of our institution and the growth of our students.



PROF. (DR.) ARCHANA KUMAR HEAD OF DEPARTMENT

Dear Readers,

It is with profound pleasure, humility and anticipation that we celebrate the launch of Intelligence Artificielle with this inaugural issue enumerating the latest developments in AI and Data Science, achievements of our faculty and students. The department aims to produce competent AI and Data Science

professionals to serve the needs of the society. The department offers excellent academic environment with a team of highly qualified faculty members to inspire the students to develop their technical skills and inculcate the spirit of team work in them.

I can say this with full confidence that the ADGITM would provide every student a muchexpected opportunity of boundless growth through an integrated structure of curricular, cocurricular and extracurricular activities. We wish to bring out the best in our students and prepare them to become competent enough to meet the challenges of the world. I am proud to be a part of an institution that believes in putting the education of the students beyond everything.

Articles for the magazine are invited from the readers. It is our sincere appeal to all readers to read & enjoy and convey their suggestions to the Editorial Board so that any mistake committed in the magazine is minimized & board is able to improve the quality. I believe this magazine, though small in grandeur will point at a certain direction towards sustainable development, and if so, then the real purpose of this magazine will be fulfilled.

VISION

To enable the modern society with skilled engineers in the field of AI and Data Science, thereby bringing transparency and effectiveness in decision making for the overall welfare of mankind.

MISSION

M1. To produce competent AI and Data Science professionals to serve the needs of the society.

M2. To prepare industry ready engineers, trained in modern tools and techniques of AI and Data Science.

M3. To foster innovative research work in the area of AI and Data Science and allied areas, leading to quality decision making.



PEO

PEO1: Graduates shall thrive in the field of Artificial Intelligence & Data Science by utilizing their gained knowledge and abilities to build practical and viable engineering solutions.

PEO 2:Graduates shall be adaptable to new technologies and advances in order to achieve professional excellence.

PEO 3: Graduates shall be able to effectively manage resources and pursue their careers with integrity, ethics, and social responsibility.

SKILLS FOR SUCCESS IN AI&DS

Working with AI requires an analytical thought process and the ability to solve problems with cost effective and efficient solutions.

Professionals need technical skills to design, maintain and repair technology and software programs.

Those interested in becoming AI professionals need a education qualification based on foundations of maths, technology, logic and engineering prospective.

Cognitive Science skills.



STUDENT ACHIEVEMENTS

Our Students shown boundless growth in curricular, cocurricular and extracurricular activities.

RESEARCH PAPERS BY OUR STUDENTS -JUST A BEGINNING

Sign Language Recognition App with Python

Nandini Singh Dr. Akhilesh Das Gupta Institute of Technology and Management Email: <u>nandinisingh5may@gmail.com</u>

Abstract - Sign language is a form of communication that involves the use of hand gestures and is commonly used by people with hearing loss. The objective of this research is to develop a hand sign language recognition model for alphabetic letters using a deep learning approach. The key contribution of this study is the creation of a real-time hand sign language image acquisition and recognition model for the alphabet. The proposed model is a seven-layer Convolutional Neural Network (CNN), trained using the American Sign Language (ASL) alphabet database consisting of 27 categories, each with 3000 images, for a total of 87,000 hand gesture images sized 200x200 pixels. The experimental results demonstrate that image preprocessing using background improve model correction can performance.

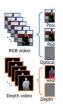
Keywords - Sign Language Recognition, Deep Learning, Convolutional Neural Network (CNN), Image Preprocessing, Transfer Learning, Data augmentation.

1. INTRODUCTION

Sign language is a common method of nonverbal communication used by people to express their thoughts and emotions. However, individuals who are not familiar

with sign language find it difficult to understand, and as a result, people with hearing impairments are often ignored and marginalized by society. This study aims to develop a sign language recognition model for alphabetic letters using a deep learning approach. Deep learning methods are widely used in computer science and have shown to produce excellent results in image classification tasks. This study focuses on hand sign language recognition for the alphabet using a seven-layer CNN trained on the ASL dataset with real-time image acquisition from a webcam, and by applying resizing and background correction. The contributions of this study include the development of - --recognition mod

Hand Gesture Recognition Using MediaPipe and Convolutional Neural Networks



acquisition mode

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Touchless interaction is an active area of research due to its application in the area of medical system to gaming. Sign language could benefit a people with hearing difficulty. It is important to realize sign language recognition on smartphones. Hand gestures are an effective touchless way to interact with computer systems. Several methods have been proposed for hand gestures. In recent years we have seen so many people with hearing difficulty. Face-to-face communication is a very important channel that can convey message, feeling, and personal connection. People who have hearing difficulty use two types of communication, which are namely reading writing and a sign language. However, the inability to communicate has become an obstacle to the advancement of the hearing impaired it should be solved. Hand tracking is a requisite component to provide a natural way for interaction and communication in AR/VR, and it has been an active research topic in the industry. Currently, there are many devices that use voice commands, especially on smartphones that we often use, voice commands themselves are based on speech recognition algorithms. Due to some of the problem like noisy background voice command itself has several shortcomings. An alternative to this problem is hand gestures. And also, communication using hands is risky due to covid pandemic which requires maintaining distance.

Real-time Hand Gesture Recognition using OpenCV

Mayank Bhardwaj

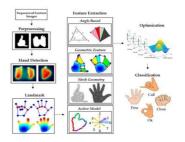
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Abstract - The aim of this research paper is to make a real-time hand gesture recognition system that allows natural and intuitive interaction between humans and computers. Our study suggests utilizing conventional cameras, which are commonly available in most computer systems, to perform such tasks. The system uses computer vision and machine learning techniques to identify and classify hand gestures in real time and is suitable for various applications.

Keywords - Hand gesture recognition, Computer vision, OpenCV, Machine learning, Deep learning, Convolutional neural networks (CNNs), Artificial intelligence (AI), Human-computer interaction (HCI)

1. INTRODUCTION

Hand gesture recognition is a fascinating and rapidly evolving field that has captured the attention of researchers and technology enthusiasts alike. The ability to accurately and reliably recognize hand gestures can have significant implications for a wide challenges that must be addressed before they can be fully realised.



1.1 Applications

Hand gesture recognition has numerous applications across a range of domains, including gaming, virtual reality, sign language recognition, robotics, and humanrobot interaction. In gaming, hand gestures can be used as a natural and intuitive way of controlling characters, navigating through environments, and interacting with objects. In virtual reality, hand gestures can enhance the sense of immersion and provide a more intuitive way of interacting with the virtual world. In eign language recognition, hand gnition can help to bridge the

Heart Failure Prediction Using ANN

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Abstract -

Heart failure (HF) is a leading cause of morbidity and mortality worldwide, necessitating the development of effective predictive models. This research paper presents a comprehensive study on the application of Artificial Neural Networks (ANNs) for HF prediction, aiming to enhance risk assessment and clinical decision-making. The study utilizes a large-scale dataset encompassing diverse patient characteristics, including demographic factors, medical history, laboratory results, and imaging findings. The ANN architecture is designed to capture intricate relationships and nonlinear patterns among the input features, enabling accurate HF prediction. Various training algorithms and model configurations are evaluated to optimize performance. The research investigates the impact of different input feature selections, addressing the challenge of feature relevance and dimensionality reduction. Additionally, it explores the influence of varying ANN architectures, such as feedforward, recurrent, and convolutional networks, to assess their suitability for HF prediction.

Keywords: ANN ,Healthcare ,Hf prediction

I. INTRODUCTION

Heart failure (HF) is a complex cardiovascular condition characterized by the heart's inability to pump blood effectively, leading to various symptoms and reduced quality of life. Early prediction of heart failure risk is crucial for implementing timely interventions and improving patient outcomes. In recent years, machine learning techniques, particularly Artificial Neural Networks (ANNs), have shown great potential in accurately predicting heart failure occurrence. This research paper aims to explore and evaluate the application of ANNs for heart failure prediction, offering insights into the predictive capabilities and clinical

The objectives of the research paper are clearly stated, emphasizing the need for a comprehensive evaluation of ANN models for heart failure prediction. The paper aims to investigate the impact of various factors, including input feature selection, ANN architecture, training algorithms, and model performance metrics. Additionally, the study aims to compare the predictive accuracy of ANN models with existing clinical risk scores, establishing the superiority and clinical relevance of the proposed approach.

II. REVIEW

relevance of this approach

The research paper under review investigates the application of Artificial Neural Networks (ANNs) for the prediction of heart failure (HF). The paper aims to provide insights into the predictive capabilities and clinical relevance of ANNs in this domain. This review assesses the methodology, results, and significance of the paper's findings, contributing to the understanding of HF prediction using ANNs.

The research paper reviewed demonstrates the potential of using ANNs for HF prediction. The methodology is sound, and the results indicate promising predictive accuracy. The implications discussed highlight the clinical relevance of ANNs in HF management. While some improvements could be made, the paper contributes to the field and encourages further exploration of ANNs in HF prediction. Overall, it provides valuable insights and sets the stage for future research endeavors.

The research paper reviewed presents a significant contribution to the field of HF prediction using ANNs. The methodology is robust, and the results demonstrate the high predictive accuracy of the ANN model. The findings underscore the potential clinical relevance of ANNs in identifying

Real-time Sign Language Recognition using TensorFlow

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Abstract - Sign language recognition plays crucial role in enabling effective communication between the deaf community and the hearing population. This paper presents a deep learning-based approach for sign language recognition, leveraging the expressive power of neural networks to accurately interpret sign gestures. The proposed system utilizes convolutional neural networks (CNNs) to extract relevant features from sign language videos, followed by recurrent neural networks (RNNs) to model the temporal dynamics of the gestures. The combination of CNNs and RNNs enables robust recognition of sign language gestures, even in the presence of variations in hand shape, movement, and speed.

Keywords - Sign language recognition, TensorFlow, Machine learning, Deep learning, Convolutional neural networks (CNNs), Recurrent neural networks (RNNs), Artificial intelligence (AI), Humancomputer interaction (HCI)

1. INTRODUCTION

Sign language recognition is a technolo that utilizes machine learning a computer vision to interpret a understand sign language gestures. plays a crucial role in bridging communication gaps between sign language users and non-sign language users, enabling effective and inclusive communication. By analyzing visual data and extracting meaningful patterns, sign language recognition systems facilitate accessibility, empowering individuals who rely on sign language as their primary means of communication.

1.1 Applications

Accessibility: Enables effective communication between deaf and hearing individuals, fostering inclusivity and accessibility.

Education: Facilitates real-time translation of sign language, aiding deaf students in classrooms and accessing educational resources.

 Human-Computer Interaction:
 Enhances

 user interaction with devices, making
 interfaces intuitive for sign language users.

 Assistive
 Technologies:
 Supports

Advance Attendance system using face recognition system in python

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Abstract— In this digital era, face recognition system plays a vital role in almost every sector. Face recognition is one of the mostly used biometrics. It can used for security, a uthentication, identification, and has got many more advantages. Despite of having low accuracy when compared to iris recognition and fingerprint recognition, it is being widely used due to its contactless and non-invasive process. Furthermore, face recognition system can also be used for attendance marking in schools, colleges, offices, etc. This system aims to build a class attendance system which uses the concept of face recognition as existing manual attendance system is time consuming and cumbersome to maintain. And there may be chances of proxy attendance. Thus, the need for this system increases. In this method the camera is settled, and it will capture the image, the faces are recognized after that recognized along with the data base and eternfally the attendance is marked. This system is the office or classroom and marks the attendance by recognizing

Keywords—component, formatting, style, styling, insert (key rds)

I. LITERATURE REVIEW / RELATED RESEARCH OUTCOMES:

In [1] 2017 Samuel John presented a Face Recognition Attendance System with GSM Notification. This system uses theViolalones algorithm. This algorithm used for detect faces. Also, Fisher faces algorithm was used to create pattems of the faces which were caught. That created templates stored in the database. This system used library which is OpenCV and used Software Development Kit (SDK) to create the graphical user interface. In[2] other paper, Jenif D Souza introduces a Automated Attendance Marking and Management System by Facial Recognition. This system uses the algorithm called Histogram. Histogram algorithm used for face identification purpose. In this algorithm, The face image is converted to matrix form. Histogram are used for recognize of the exact faces. This system overcome the problem of time consuming. In[3] 2019 Nandhini R. introduced Attendance System based on face recognition This system captures the video of the students. Genveru it into frames and store it in the database. Also, Convolution Neural Nilesh Kumar Artificial Intelligence & Data Science ADGITM New Delhi, Delhi nileshabcd556@gmail.com

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Network (CNN) algorithm is used to detect faces. This System helps in improving the accuracyand speed.

In[4] 2016, E Vardharajan, R Dharani, S Jeevitha, S Hemalata introduced Automatic Attendance Management System Using Face Recognition. In this system the use Eigen Faces, Eigen Weight method for face detection this system the camera detention the image and then system crop the faces ofstudent and tie the faces with student database.

ofstudent and tie the faces with student database. Authors in [5] researches to get best facial recognition algorithm (Eigenface and Fisherface) provided by the Open CV 2.4.8 by comparing the Receiver Operating Characteristics (ROC) curve and then implemented it in the attendance system. Based on the experiments carried out in this paper, the ROC curve proved that, Eigenface achieves better result than Fisherface. System implemented using Eigenface algorithm achieved an accuracy rate of 70% to 90%. In [6], authors proposed a method for student attendance system in classroom using face recognition technique by combining Discrete Wavelet Transforms (DWT) and Discrete Cosine Transform (DCT). These algorithms were used to extract the features of student's face followed by applying Radial Basis Function (RBF) for classifying the facial objects. This system achieved an accuracy rate of 82%, attendance management process and reducing errors. However, the implementation of face recognition-based attendance systems in educational institutions and workplaces requires careful consideration of technical feasibility, accuracy, and user acceptance.

The lack of research on the feasibility and accuracy of face recognition-based attendance systems in different contexts, such as different lighting conditions, poses, and occlusions, is a major research gap. Moreover, the user acceptance and ethical implications of using biometric technology also need to be investigated. Therefore, the research problem is to evaluate the feasibility, accuracy, and user acceptance of face recognition-based attendance systems, identify the factors that affect their performance and adoption, and address the ethical and legal implications of using such technology in educational institutions and workplaces. Ultimately, the goal is to provide recommendations for improving the efficiency, accuracy, and user acceptance of attendance management systems while ensuring ethical and legal compliance.

Colour Detection System Using Machine Learning Techniques

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Abstract—This article introduces colour detection using machine learning. The system is based on supervised learning to determine the colour of objects in the image. It will detect the colour of an object from the given image using Convolutional Neural Network (CNN), The CNN will be trained on an image database containing known coloured objects. The system will show the colour of the object in the image with confidence in the prediction.The system can be used in many applications such as fruit and vegetable sorting, crop tracking and medical imaging.

Keywords—Colour detection, CNN, KNN, Machine learning, Images

I.

INTRODUCTION

Colour perception is an important task in computer vision. It is used in many applications such as product delivery, fruit and vegetable sorting, medical imaging. The routine colour analysis process is time consuming and inaccurate. Machine learning can help improve the accuracy and speed of colour detection.

Handwritten Digit Recognition using Deep Learning

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The reliance of humans over machines has never been so high such that from object classification in photographs to adding sound to silent movies everything can be performed with the help of deep learning and machine learning algorithms. Likewise, handwritten text recognition is one of the significant areas of research and development with a streaming number of possibilities that could be attained. Handwriting recognition (HWR), also known as Handwritten Text Recognition (HTR), is the ability of a computer to receive and interpret intelligible handwritten input from sources such as paper documents, photographs, touchscreens and other devices and classify them into 10 predefined classes (0-9). This has been a topic of boundless-research in the field of deep learning. Digit recognition has many applications like number plate recognition, postal mail sorting, bank check processing, etc. In Handwritten digit recognition, we face many challenges because of different styles of writing of different peoples as it is not an Optical character recognition. We may use Support Vector Machine, Multilayer Perceptron, and Convolutional Neural Network. The accuracy of any model is paramount as more accurate models make better decisions. The models with low accuracy are not suitable for real-world applications. Ex- For an automated bank cheque processing system where the system recognizes the amount and date on the check, high accuracy is very critical. If the system incorrectly recognizes a digit, it can lead to major damage which is not desirable. That's why an algorithm with high accuracy is required in these real-world applications. Hence, we are providing a comparison of different algorithms based on their accuracy so that the most accurate algorithm with the least chances of errors can be employed in various applications of handwritten digit recognition.

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colour of the object in the image with confidence in the prediction.

II. LITERATURE VIEW

There have been several studies on colour detection using machine learning. Many of these studies have used a CNN for colour detection.

For example, in [1], the authors used a CNN to recognize colours in images. The CNN was trained on a dataset of images containing objects of known colours. The authors showed that CNN was able to accurately recognize the colour of objects in the images.

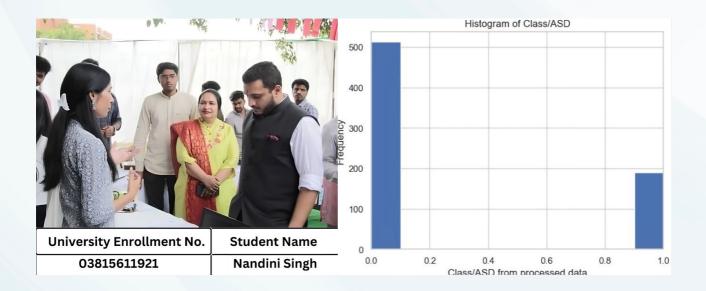
In [2], the authors used a CNN to detect the colour of fruits and vegetables in images. The CNN was trained on a dataset of images containing fruits and vegetables of known colours. The authors showed that CNN was able to accurately detect the colour of the fruits and vegetables in the images.

In [3], the authors used a CNN to detect the colour of objects in medical images. The CNN was trained on a dataset of medical images containing objects of known colours. The authors showed that CNN was

PROJECTS

A GLIMPSE OF PROJECTS BY OUR STUDENTS

AUSTISM DETECTION USING MACHINE LEARNING



Autistic Spectrum Disorder is a neurodevelopment condition associated with significant healthcare costs, and early diagnosis can significantly reduce these. Unfortunately, waiting times for an ASD diagnosis are lengthy and procedures are not cost effective.

This is a binary classification problem, given some attributes of a person, the model can predict whether the person would have ASD using Supervised machine learning.

SUPERVISOR: DR. ARCHANA KUMAR & MS. GARIMA GAKHAR



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ENROLLMENT NO.	NAME
02115611921	JATIN SINGH SAGOI

SUPERVISOR: DR. ARCHANA KUMAR & MS. GARIMA GAKHAR

YOGA DELIGHT

A yoga application which detects posture using Deep Learning.

With real-time data captured from camera, a person can get feedback in the application on the accuracy of their pose and keep track of their fitness goal.

This application can be put to use where a Yoga/fitness enthusiast can practice Yoga without the need of an instructor.

The principle reason of the project is to have a user practice Yoga poses accurately and be able to keep a track of daily Yoga routine.



CROP FORECASTING WITH SATELLITE DATA

Better understanding crop yields and how to maximize efficiency of crops is an urgent need.

Used sentinel-2 satellite radar data accessed through Microsoft's Planetary Computer API to build a ml model that predicts rice crop yield for a given geographical location.

Different indices lie RVI, NDVI, NDRE, GNDVI were calculated with the help of the band data from the satellite. Which indicates the crop's health and yield.

Field size (ha)	Date of Harvest	Rice Crop Intensity(D=Double, T=Triple)	Season(SA = Summer Autumn, WS = Winter Spring)	Longitude	Latitude	District
3.40	15-07-2022	т	SA	105.243554	10.510542	Chau_Phu
2.43	15-07-2022	т	SA	105.255096	10.509150	Chau_Phu
1.95	15-07-2022	D	SA	105.192464	10.487721	Chau_Phu
4.30	15-07-2022	T	SA	105.241281	10.494453	Chau_Phu
3.30	14-07-2022	D	SA	105.252744	10.535058	Chau_Phu
	size (hu) 3.40 2.43 1.95 4.30	Harvest size (%) 15-07-2022 3.40 25-07-2022 2.43 55-07-2022 1.95 55-07-2022 4.30	Internsity()::Dpublic, TwTmping) Date of T Final Filt T 15:47-0022 3.40 T 15:47-0022 2.43 D 15:47-0022 1.95 T 15:47-0022 3.40	Secion(DA T Surface) Meter sky(0::Double, Tentripio) Date of I Partney Secion (DA T Surface) SA T 15:47-2022 3.40 SA T 15:47-2022 2.43 SA D 25:47-2022 1.95 SA T 15:47-2022 2.43 SA D 25:47-2022 1.95 SA T 15:47-2022 2.43	Lengshade Secondp.k.t. Surmary Surmary Surmary Surmary Surmary 105.240354 CM SA T 15.47-0022 3.40 105.240354 SA T 15.47-0022 2.43 105.32464 SA D 15.47-0022 2.43 105.32464 SA D 15.47-0022 2.43 105.32464 SA D 15.47-0022 2.43 105.32463 SA T 15.47-0022 2.43	Leikude Longitude Section(bA = 5 unmeet) Austern, W5 = Wirth Spring) Matern Wirth W5 = Wirth Spring) Date (Mu) Tu ¹ (Marrent M5 = Wirth Spring) 10.530542 106.241554 SA T 15-07-0022 3.40 10.530542 106.241554 SA T 15-07-0022 3.40 10.530542 106.241554 SA T 15-07-0022 2.43 10.437721 106.192444 SA D 15-07-0022 1.96 10.434453 105.241281 SA T 15-07-0022 2.43

etching Data from API

catalog = pystac_client.Client.open("https://planetarycomputer.microsoft.com/api/stac/v1")

ef get_sentinel_data(longitude, latitude, season,assests):

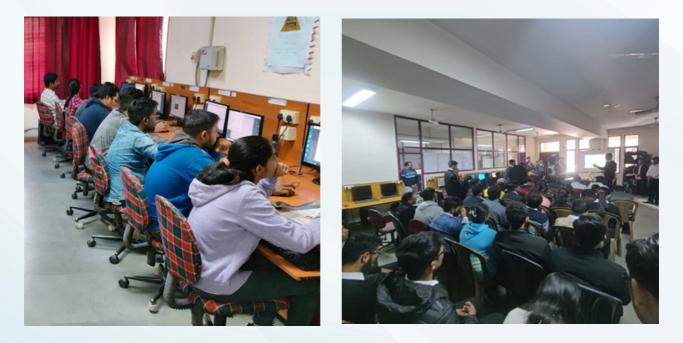
Returns a list of VV,VH, VV/VH values for a given latitude and longitude over a given time period (ba: Attributes: Longitude - Longitude Latitude - Latitude scassen - The scasem for which band values meed to be extracted.

bands_of_interest = assests

time_slice = "2022-05-01/2022-08-31"

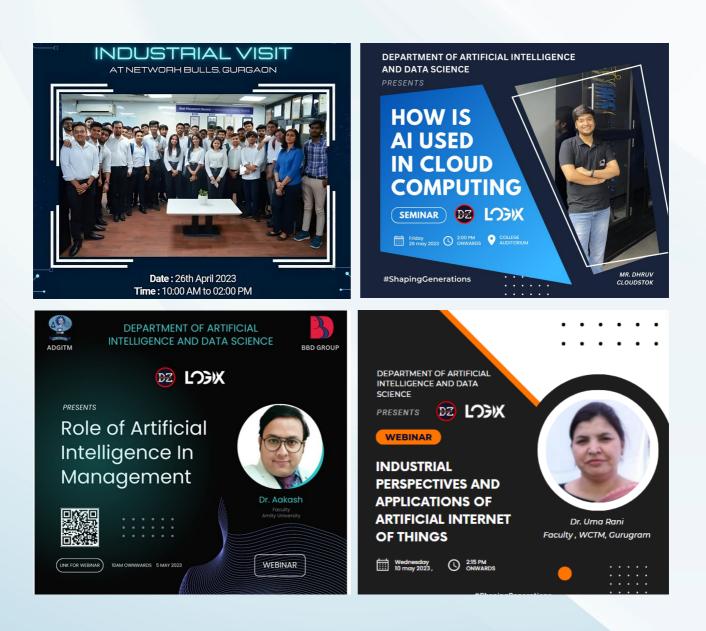
DEPARTMENTAL SOCIETY DATAZOIC





DATAZOIC-a next generation data analytics platform. Events are held regularly under the society.

EXTRACURRICULARS BY OUR STUDENTS -JUST A BEGINNING





PRESENTATIONS



"OUR WORK IS THE PRESENTATION OF OUR CAPABILITIES."

GROUP DISCUSSION



"ALONE WE CAN DO SO LITTLE; TOGETHER WE CAN DO SO MUCH."

INFOXPRESSION



Our team of students secured 2nd position in the FAST LANE on 18th November 2022 organized under InfoXpression 2022-23 (Annual Technical Fest) by University School of Information Communication and Technology, GGSIPU. The winners include:

Ayush Chauhan (Al& DS Second Year) Tushar Sain i(Al& DS Second Year) Dhruv Yadav (Al& DS Second Year) Ansh Varshney (Al& DS Second Year)

INTRA COLLEGE CRICKET TOURNAMENT WINNER



Al&DS, IInd year students secured 1st position in the Intra College Cricket Tournament at ADGITM Sports Meet, April 2023.

VIHAAN 6.0



Jatin Singh Sagoi(AI&DS, IInd year) gave remarkable performance in 6.0 organized by IEEE DTU student chapter from 24th to 25th April, 2023.



LITERARY FESTIVAL WINNER



Krishna Mishra (1st Year , AI&DS) has secured 2nd position in Pen N' Roses, the English Slam Poetry Competition organized in Carpe Diem' 23, the Annual Literary Fest of Deshbandhu College on 1st May 2023

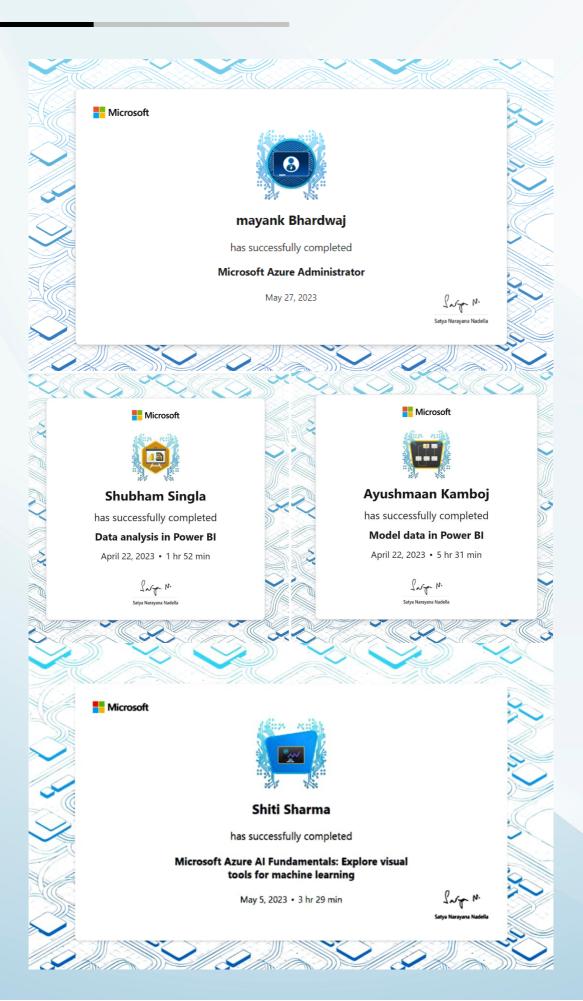
MLH HACKCBS 5.0 WINNER

Nandini Singh (2nd Year, AI&DS) WINNER : MLH HackCBS 5.0 (Best use of elastic search)

India'sLargestStudent-runHackathonconducted atShaheedSukhdevCollegeOfBusinessStudies on5thNovember 2022



ONLINE CERTIFICATIONS







CERTIFICATE OF COMPLETION

Presented to

Vipul Balyan

For successfully completing a free online course Python Fundamentals for Beginners

> Provided by Great Learning Academy (On March 2023)





Stanford University

3 Courses

NANDINI SINGH

has successfully completed the online, non-credit Specialization

Machine Learning

Congratulations on completing all three courses of the Machine Learning Specialization! You studied modern machine learning concepts, including supervised learning (linear regression, logistic regression, neural networks, decision trees), unsupervised learning (clustering, anomaly detection), recommender systems, and reinforcement learning. You learned some of the best practices for building machine learning models. You've also gained practical skills to apply machine learning techniques to challenging real-world problems. Now #BreakIntoAI and start building your career in machine learning!

The online specialization named in this certificate may draw on material from courses taught on-campus, but the included courses are not equivalent to on-campus courses. Participation in this online specialization does not constitute enrollmen at this university. This certificate does not confer a University grade, course credit or degree, and it does not verify the identity of the learner. Andrew Ng, Instructor, DeepLearning.Al Eddy Shyu, Curriculum Architect, DeepLearning.Al Aarti Bagul and Geoff Ladwig, Curriculum Engineers, DeepLearning.Al

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Unsupervised Learning, Recommenders, Reinforcement Learning

DeepLearning.Al	COURSE CERTIFICATE
Apr 2, 2023	
Raghav Singh	
has successfully completed	STION ON EVEN
Supervised Machine Learning: Regression and Classification	
an online non-credit course authorized by DeepLearning.AI and Stanford University and offered through Coursera	CERTIFICE SECERTIFICE
John Mg	
Andrew Ng.Instructor. DeepLearning.AI Eddy Shyu. Curriculum Architect. DeepLearning.AI Aarti Bagul and Geoff Ladwig. Curriculum Engineers. DeepLearning.AI	
	Verify at: https://coursera.org/verify/C6X6M6UBYH77
	Coursera has confirmed the identity of this individual and their participation in the course.



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Certificate no: UC-c887733c-b6d2-48df-ba43-be9feeea25fe

CERTIFICATE OF COMPLETION

Advanced C Programming Masterclass: Pointers & Memory in C

Instructors Vlad Budnitski

Abhishek Dhawan

Date May 24, 2023 Length 31 total hours

FACULTY ACHIEVEMENTS

The faculty performance and achievement list for the academic session 2022-2023.

Prof. (Dr.) Archana Kumar	2 Research Papers (I IEEE, 1 communicated) 2 Patents Attended 3 FDPs NPTEL Online ELITE Certification- Software Testing
Dr. Deepaly	5 Research Papers
Dr. Anshu	4 Research papers(2 Scopus, 1 SCI, 1 Web of Science) Course in Data Science from IIM, Lucknow
Ms. Deepti	NPTEL Discipline Star Certificate 1 Research Paper Attended 3 FDPs

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Data science is the future, and it is here to stay.

- ANA A. PEREIRA



DEPARTMENT OF ARTIFICIAL INTELLIGENCE & DATA SCIENCE