



Vivekanand Education Society's
Institute Of Technology



Department Of Computer Engineering

PRAKALP 2022-23

A Project Book



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SUMMARY

Sr. No.	Area Of Specialization	B.E.	T.E.	S.E.
1.	AI, Deep Learning & DWM	10	14	9
2.	Big Data Analytics & Machine Learning	14	10	5
3.	IoT, Robotics & Embedded Systems	01	03	-
4.	Image Processing, Virtual & Augmented Reality	10	06	5
5.	Networking, Security & Blockchain	06	06	1
6.	Cloud Computing & High Performance Computing	00	02	-
7.	Application Design & Product Development	14	12	36
	Total Projects	53	53	56



Sr. No.	Title/Year	No. Of Projects
1.	Industry Projects	9
2.	Research Projects	18
3.	Innovation Projects	18
4.	CIIA Projects	3
5.	Pradarshani'23	22
6.	Buzzpro'23	7

I. B.E. PROJECTS

1. AI, Deep Learning & DWM

1.1.	Mobile Keyboard Prediction using Federated Learning
1.2.	Spatiotemporal Forecasting of Traffic Flow Data & Optimal Path Navigation
1.3.	Conversational AI for E-commerce
1.4.	Speech Emotion Recognition
1.5.	AI based WQI analysis of Maharashtra
1.6.	Rehearse: AI based feedback on communication skills
1.7.	SocialDotReal - Detection system for fake social media accounts
1.8.	MOOC Course Recommendations and Knowledge Enhancement for Career Growth using AI/ML
1.9.	Predicare - ML based Disease Diagnostic System
1.10.	Disaster Management System using Deep Learning

- Industry Projects
- Research Projects
- Innovation Projects
- CIIA Project
- Pradarshini'23
- Buzzpro'23

I. B.E. PROJECTS

2. Big Data Analytics & Machine Learning

2.1.	CMS Detector Quality Assurance using ML Methods - EXTENDED
2.2.	User Preference Recommendation System & Analytics for News Articles
2.3.	Chat Analytics
2.4.	Detection of the severity of Temporomandibular Joint dysfunction using machine learning
2.5.	Physical object identification in CMS experiment at CERN using ML approaches.
2.6.	Analysis of Persona using Machine Learning
2.7.	Heart Disease Prediction Using ML
2.8.	Early Detection of Parkinson's Disease Using Machine Learning
2.9.	Wireless extraction of Display Panel Data on complex machines using non-invasive and wireless approach with ML techniques
2.10.	Sentiment Analysis of Product-Based Reviews Using Machine Learning
2.11.	Mental Health Prediction Using Machine Learning
2.12.	SocialDotReal - Detection system for fake social media accounts
2.13	Forecasting of Carbon Emission due to Meat Industry

I. B.E. PROJECTS

3. IoT, Robotics & Embedded Systems

3.1.	Smart Ride Sharing
3.2.	Smart Refrigerator

- Industry Projects
- Research Projects
- Innovation Projects
- CIIA Project
- Pradarshini'23
- Buzzpro'23

I. B.E. PROJECTS

4. Image Processing, Virtual & Augmented Reality

4.1.	HarGharSolar : Recognition of Potential Rooftop PhotoVoltaic Arrays using Geospatial Imagery and Extrapolation of Power Generation for Diverse Climate Zones.
4.2.	LensPatrol
4.3.	Using Histopathological Images to grade oral pre-cancer
4.4.	Activity Monitoring and Unusual Activity Detection for Elderly Homes
4.5.	Hand Gesture Recognition for Disabled People
4.6.	Analysis and Detection of Alzheimer's Disease using MRI
4.7.	Gujarati Script Recognition (GSR)
4.8.	Image to text summarisation
4.9.	Hand Gesture Recognition
4.10.	Crime Scene Reconstruction

- Industry Projects
- Research Projects
- Innovation Projects
- CIIA Project
- Pradarshini'23
- Buzzpro'23

I. B.E. PROJECTS

5. Networking, Security & Blockchain

5.1.	Secure Multimedia Communication
5.2.	Vehicle Information Using Blockchain
5.3.	Automated Web Article Extraction based on RSS and Summarization with Pointer-Generator Networks
5.4.	Decentralised Banking Services Using Blockchain
5.5.	Food Supply Chain Management using Blockchain
5.6.	MedEx - Secured Medical Report Management using Blockchain Techonolgy

- Industry Projects
- Research Projects
- Innovation Projects
- CIIA Project
- Pradarshini'23
- Buzzpro'23

I. B.E. PROJECTS

7. Application Design & Product Development

7.1.	MetaMart
7.2.	Pehchaan: A Touchless Attendance System
7.3.	This-Abled: An Aid to get Paid
7.4.	kisaan- multiservice app for farmers
7.5.	EZfinance
7.6.	Kissan Konnect - Smart Farming App
7.7.	Smart Ride Sharing
7.8.	Sahayata - A System to promote Inclusivity
7.9.	Tarjama : The Kashmiri Translator
7.10.	Automated Investment Portfolio Recommendation

- Industry Projects
- Research Projects
- Innovation Projects
- CIIA Project
- Pradarshini'23
- Buzzpro'23

I. B.E. PROJECTS

7. Application Design & Product Development

7.11.	Shodhak - A Credit Card Fraud Detection System
7.12.	Grow more
7.13.	Smart-Eye:Guidance system for the visually impaired
7.14.	GrowSkill: A platform to upskill and job search

- Industry Projects
- Research Projects
- Innovation Projects
- CIIA Project
- Pradarshini'23
- Buzzpro'23

II. T.E. PROJECTS

1. AI, Deep Learning & DWM

1.1.	Red Teaming and VAPT
1.2.	Mental Wellness - Mind Matters
1.3.	Prediction of mental health based on social media with prescription audit
1.4.	Court Cases Priority Scheduling
1.5.	Real Estate Cost Prediction
1.6.	"I-Detox" dealing with Internet Addiction
1.7.	Perception understanding: E-Commerce Product Evaluation
1.8.	Auto mark-up code from Sketches
1.9.	Suraksha - Health Insurance Claim Analysis
1.10.	Dream Team Analyzer and Predictor for Fantasy Premier League
1.11.	Virtual Race Strategy Engineer

- Industry Projects
- Research Projects
- Innovation Projects
- CIIA Project
- Pradarshini'23
- Buzzpro'23

II. T.E. PROJECTS

1. AI, Deep Learning & DWM

1.12.	Financial Literacy Chatbot
1.13.	Annapoorna-Food for all
1.14.	Cattle Tracking System

- Industry Projects
- Research Projects
- Innovation Projects
- CIIA Project
- Pradarshini'23
- Buzzpro'23

II. T.E. PROJECTS

2. Big Data Analytics & Machine Learning

2.1.	Digital Forensics
2.2.	Flash Flood Prediction
2.3.	Cardio Climatology
2.4.	Heart Disease Prediction using ML
2.5.	Depression Analysis using ML
2.6.	DDOS Attack Detection using Machine Learning
2.7.	Melanoma Prognosis and Care
2.8.	Indian Stock Market Analyzer and Predictor using Machine Learning
2.9.	InsureME: Your Personal Healthcare Companion
2.10.	Prediction of Road Accidents using Machine Learning

- Industry Projects
- Research Projects
- Innovation Projects
- CIIA Project
- Pradarshini'23
- Buzzpro'23

II. T.E. PROJECTS

3. IoT, Robotics & Embedded Systems

3.1.	Speech Emotion Recognition System
3.2.	Maths Guru - Digital Mathematics Game
3.3.	Smart Wearable for Hearing Impaired

- Industry Projects
- Research Projects
- Innovation Projects
- CIIA Project
- Pradarshini'23
- Buzzpro'23

II. T.E. PROJECTS

4. Image Processing, Virtual & Augmented Reality

4.1.	Skin Cancer Recognition
4.2.	Smart Music Player using Mood Detection
4.3.	Lung Cancer Detection
4.4.	Breast cancer risk prediction using machine learning
4.5.	Bone Fracture Detection and Prevention
4.6.	Image To Text and Speech Conversion Using Machine Learning

- Industry Projects
- Research Projects
- Innovation Projects
- CIIA Project
- Pradarshini'23
- Buzzpro'23

II. T.E. PROJECTS

5. Networking, Security & Blockchain

5.1.	Chainify - We believe in a world where barriers to real estate ownership are removed
5.2.	ChainBank : Banking without Banks
5.3.	'VERIFICATE': Leveraging Blockchain for certificate verification
5.4.	Secure Voting System using Blockchain
5.5.	Rating Humour Quotient in Standup Comedy
5.6.	Decentralized Music Streaming Platform Using Blockchain

- Industry Projects
- Research Projects
- Innovation Projects
- CIIA Project
- Pradarshini'23
- Buzzpro'23

II. T.E. PROJECTS

6. Cloud Computing & High Performance Computing

6.1.	AI model to study health effects of environmental factors
6.2.	Sentimental Analysis of OYO Hotel Reviews

- Industry Projects
- Research Projects
- Innovation Projects
- CIIA Project
- Pradarshini'23
- Buzzpro'23

II. T.E. PROJECTS

7. Application Design & Product Development

7.1.	Digital Vikreta : A platform for local stores
7.2.	Pehchan: A gender friendly E-learning Platform
7.3.	360 Degree Performance Analysis
7.4.	Career Buddy System
7.5.	e-Pradaan- A Connectivity between Donor and Reciever
7.6.	Harassment Monitoring System
7.7.	Gym Management System
7.8.	House Price Prediction System using ML
7.9.	Inclusive Education for Diverse Learning
7.10.	PocketGuide
7.11.	Jan-Seva-Bot
7.12.	RestroConnect

- Industry Projects
- Research Projects
- Innovation Projects
- CIIA Project
- Pradarshini'23
- Buzzpro'23

III. S.E. PROJECTS



1. AI, Deep Learning & DWM

1.1.	Goal 9	Real time Transcribing
1.2.	Goal 15	ICT to enhance quality of Life on Land
1.3.	Goal 4	NetoMining- Using netnographic analysis and Text mining for Understanding consumer perceptions of Electronics commerce companies
1.4.	Goal 17	NGO network: connecting for better future
1.5.	Goal 3	COVID-19 Detection SARS- COV-2 using Deep learning
1.6.	Goal 3	Plant identification using AI for kids
1.7	Goal 11	Car Inventory store
1.8.	Goal 4	Web based Student Performance Analysis
1.9	Goal 3	Smart Health consulting system



SUSTAINABLE DEVELOPMENT GOALS

17 GOALS TO TRANSFORM OUR WORLD



III. S.E. PROJECTS



2. Big Data Analytics & Machine Learning

2.1.	Goal 3	Practice Self-Care App
2.2.	Goal 17	Knowledge sharing - Join second hand whenever you can
2.3.	Goal 3	Lung Diseases Classification using Machine learning
2.4.	Goal 8	Profit Prediction using Machine Learning
2.5.	Goal 4	Text Emotions Detection with Machine Learning



SUSTAINABLE DEVELOPMENT GOALS
17 GOALS TO TRANSFORM OUR WORLD



- Industry Projects
- Research Projects
- Innovation Projects
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- Buzzpro'23

III. S.E. PROJECTS



3. Application Design & Product Development

3.1.	Goal 8	Parichay Mahan Rashtra : an app to discover Maharashtra
3.2.	Goal 16	Students Grievance Support System
3.3.	Goal 2	Smart Management of Food Storage and Waste Reduction
3.4.	Goal 4	Alumni Tracking system
3.5	Goal 4	Employee Tracker Android Application
3.6	Goal 4	Indian Language Rhymes Portal
3.7	Goal 11	Forts conservation a big challenge
3.8	Goal 11	Shopkaro.io - Ecommerce APP
3.9	Goal 2	Waste/extra food management
3.10	Goal 4	Website for Competitive Exams



SUSTAINABLE DEVELOPMENT GOALS
17 GOALS TO TRANSFORM OUR WORLD



III. S.E. PROJECTS



3. Application Design & Product Development

3.11.	Goal 4	Web app for Researchers
3.12.	Goal 5	Effective Education for Transgender Community(Samseva - A system to promote inclusivity)
3.13.	Goal 4	Intelligent Scholarship Portal
3.14.	Goal 3	e-Health Services/ Smart Study
3.15	Goal 4	Data Structure algo visualization
3.16	Goal 9	Dept Library portal
3.17	Goal 4	KidoLearn: An Educational Gaming Website for kids
3.18	Goal 4	E- Samvidhaan App
3.19	Goal 8	ELearning : Learn vigorously
3.20	Goal 3	PsyMoCare



SUSTAINABLE DEVELOPMENT GOALS
17 GOALS TO TRANSFORM OUR WORLD



III. S.E. PROJECTS



3. Application Design & Product Development

3.21.	Goal 6	PharmaFirst
3.22.	Goal 4	Educating and Training for under-privileged kids
3.23.	Goal 4	Parinaam Result assessment Tool
3.24.	Goal 4	शिक्षा : Modern education to make poor children compatible
3.25.	Goal 3	Ikshana - An app for homeless elderly
3.26.	Goal 4	Time Table Management System
3.27.	Goal 11	Mall Navigation Map
3.28.	Goal 8	Travel Buddies
3.29.	Goal 6	E-Plastic Management System
3.30.	Goal 8	Event Management System



SUSTAINABLE DEVELOPMENT GOALS
17 GOALS TO TRANSFORM OUR WORLD



III. S.E. PROJECTS



3. Application Design & Product Development

3.31.	Goal 2	Food Waste Donation System
3.32.	Goal 8	LocalBuddy
3.33.	Goal 8	E- HAAT
3.34.	Goal 8	MyAssistant
3.35.	Goal 11	Web Farmer Assistant
3.36.	Goal 9	Smart Community



SUSTAINABLE DEVELOPMENT GOALS
17 GOALS TO TRANSFORM OUR WORLD



- Industry Projects
- Research Projects
- Innovation Projects
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III. S.E. PROJECTS



4. Image Processing, Virtual and Augmented Reality

4.1.	Goal 4	Facial Recognition Based Attendance System
4.2.	Goal 9	Cloth Material Identifier
4.3.	Goal 4	E-Learning through AR and VR
4.4.	Goal 3	Fitness Activity Recognition using Smartphones
4.5.	Goal 9	Facial recognition based attendance management system



SUSTAINABLE DEVELOPMENT GOALS
17 GOALS TO TRANSFORM OUR WORLD



- Industry Projects
- Research Projects
- Innovation Projects
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- Buzzpro'23

III. S.E. PROJECTS



5. Networking, Security & Blockchain

5.1.	Goal 2	Zero Hunger in India
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SUSTAINABLE DEVELOPMENT GOALS
17 GOALS TO TRANSFORM OUR WORLD



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I	B.E. Projects
1.	Deep Learning and Data Warehousing & Mining
1.1	Mobile Keyword Prediction using Federated Learning
Group Members: Roshni Jha (D17C, 25), Khushi Chouhan (D17C, 14), Nikita Jha (D17C, 24), Shaikh Insha (D17C, 54)	
Mentor: Dr. Mrs. Nupur Giri	
<p>Abstract: Federated learning is a machine learning method that enables machine learning models to obtain experience from different data sets located in different sites (e.g. local data centers, a central server) without sharing training data. Federated learning can be applied end-to-end to improve user experiences and enhance user privacy.</p> <p>Next-word predictions provide a tool for facilitating text entry. Based on a small amount of user-generated preceding text, language models (LMs) can predict the most probable next word or phrase.</p> <p>In our project, we have used a federated learning approach for next keyword prediction to accommodate fast and easy information acquisition and sharing in textual conversations in several languages and also maintaining privacy at the same time.</p> <p>Mobile keyboard prediction is a Model-Centric, Cross-Device, Horizontal Federated Learning problem.</p>	
Paper I:	
Video:	
Awards & Laurels:	
1.2	Spatiotemporal Forecasting of Traffic Flow Data & Optimal Path Navigation
Group Members: Paras Patil (D17B, 46), Vishesh Mittal (D17B, 39), Akshita Upadhyay (D17B, 61), Dhruvisha Mondhe (D17B, 40)	
Mentor: Dr. Mrs. Nupur Giri	
<p>Abstract: In recent times, the development of transport infrastructure has had a great boom, however, traffic problems continue to spread due to an increase in the population in urban areas which ultimately increases pressure on transport networks. This has resulted in an increase in congestion control issues, which directly affect citizens in the form of air pollution,</p>	

fuel consumption, traffic law violations, noise pollution, accidents, and increased travel times. This pressure on transport networks occurs due to poor and delayed management of congestion situations. Hence, there is a need to attain a better insight into congestion in order to take timely action and thus, minimize the same. This might be attained through analysis of patterns in the traffic data and thus, forecast future congestion.

The aim of this project is to develop a GNN model which provides forecasts of traffic flow data such as velocity, etc. While there are systems developed for traffic flow prediction, the data utilized for training plays an important role in the inapplicability of the model in certain regions. By training the model on Spatio-temporal data collected for Indian Province, the required foresight can be achieved thereby, allowing early action in the form of alteration of routes by users with minimal intervention from officials.

Paper I:

Video:

Awards & Laurels:

1.3 | Conversational AI for E-commerce

Group Members: Jai Malani (D17A, 46), Kusum Rohra (D17A, 62), Khushboo Dalwani (D17A, 13) , Khushboo Dhingra (D17A, 19)

Mentor: Dr. Sujata Khedkar

Abstract: Electronic commerce or e-commerce includes the service and good exchange through electronic support like the Internet. It plays a crucial role in today's business and users' experience. Also, e-commerce platforms produce a vast amount of information. The ultimate goal of the project is to involve AI(Recommendation System and Voice based searching) with E-commerce based systems. The system aims to provide Voice based Image Search technology for searching the required materials from the collection. The recommendation system categorizes all the images present in the database and compares with the input images and provides best solutions to the users.

Voice-based conversational recommenders offer a natural way to improve recommendation quality by asking the user for missing information. Recommender systems (RS) are designed to eliminate the information overload problem in today's e-commerce platforms and other data-centric online services. They help users explore and exploit the system's information environment utilizing implicit and explicit data from internal e-commerce systems and user interactions.

Today's product catalogs include pictures to provide visual detail at a glance. This approach

can effectively convert potential buyers into customers. Since most e-commerce stores use product images to promote, arouse users' visual desires and encourage them to buy products, this paper develops an image-based RS using deep learning techniques.

In traditional commerce and business, people have been notified and encouraged about purchasing products and services through their friends, news, and marketers. By growing the use of e-commerce and the advancement of its related technologies, the use of RS has great importance due to its benefits.

Paper I:

Video:

Awards & Laurels:

1.4 | Speech Emotion Recognition

Group Members: Abinash Behera (D17A 09), Soham Ambre (D17A 04), Dhiren Ganwani (D17A 21), Adwait Shirokdar (D17A 67)

Mentor: Mrs. Sujata Khedkar

Abstract: This project aims to create a website for speech emotion and sentiment recognition for audio conversations especially aimed at call-centers and proctoring systems. Audio inputs will be analyzed and a report will be displayed to the user on a dashboard which can help these organizations to perform thorough analysis of their services and plan their actions. The website will also host a separate section for regular users not affiliated to these organizations to access a number of other services revolving around audio processing.

In our project, we achieved speaker diarization and transcription using Whisper Medium model, Sentiment and Emotion recognition using Bi-Model Transformer in order to analyze calls and visualize it in order to help customer understanding and service evaluation.

Keywords:- Speech emotion, Sentiment, Dashboard, Audio processing

Paper I:

Video:

Awards & Laurels:

1.5	AI based WQI analysis of Maharashtra
<p>Group Members: Nikhita Iyer (D17A, 27), Radhika Katiyara (D17A, 32), Maitryee Choudhary (D17B, 14), Drishti Katiyara (D17B, 26)</p>	
<p>Mentor: Dr. Sharmila Sengupta</p>	
<p>Abstract: Access to safe water, sanitation, and hygiene is a fundamental requirement for human health and well-being which is defined as Goal 6 of the United Nations' (UN) 17 Sustainable Development Goals. If the pace of progress is not increased, billions of people may not have access to basic services such as safe water, sanitation, and hygiene by 2030. The demand for water is rising due to factors such as fast-growing population, urbanization, and greater requirements of water in agriculture, industry, and energy. Decades of mismanagement, poor management, over-extraction of groundwater, and contamination of water bodies by various pollutants have threatened water quality in recent years. As a result, water quality prediction and modeling have become critical for reducing water pollution. This study employs cutting-edge AI algorithms to forecast the Water Quality Index (WQI) and classify water quality. Machine Learning models have been developed to predict WQI. The results of the parameters used to estimate WQI show whether the water has been contaminated, what type of pollutant it contains, and so on. Data-driven applications that use data to become "intelligent" have wreaked havoc on daily life. The performance of modern water utilities could be enhanced by this digital technology revolution. Water utilities can use artificial intelligence to make the most of the information and data at their disposal in order to make better decisions, improve service delivery, and reduce costs</p>	
<p>Paper I:</p>	
<p>Video:</p>	
<p>Awards & Laurels:</p>	
1.6	Rehearse: AI based feedback on communication skills
<p>Group Members: Prithvi Kumar (D17A 40), Ashwin Kurup (D17A 41), Anurag Saraswat (D17A 63), Karan Sharma (D17A 64)</p>	
<p>Mentor: Dr. Dashrath Mane</p>	
<p>Abstract: Being able to communicate effectively is perhaps the most important of all life skills. An AI-based platform is essential for honing your communication skills remotely. Many alternatives to this are available online, most notably BigInterview but almost all are hidden behind a paywall and/or are oriented towards interviewers. Hence these systems restrict</p>	

themselves to only specific questions that the users must answer to, however, our system aims to simply analyze the speech of the user no matter what he/she may be speaking. In other words, the content of the speech does not matter. Our system aims to use all three aspects: Video, Audio and Text for analysis. Feedback is presented to the user in a web page along with a report that can be downloaded. Resources are also provided to the user to help with honing said communication skills, available on a separate page

Paper I:

Video:

Awards & Laurels:

1.7	SocialDotReal - Detection system for fake social media accounts

Group Members: Harsh Lulla, Kunal Wadhwani, Yash Ahuja

Mentor: Mrs Sujata Khandaskar

Abstract: The explosive growth of social media has created new opportunities for communication and information sharing, but it has also led to the emergence of a significant problem: fake accounts. These accounts can spread misinformation, manipulate public opinion, and pose a threat to users' privacy and security. In this project, we present a method for detecting fake accounts on social media platforms. Our method leverages machine learning techniques and a comprehensive set of features to accurately distinguish fake accounts from genuine ones. We evaluate our method on a large dataset of social media accounts, and demonstrate its superior performance compared to state-of-the-art fake account detection methods. Our findings provide valuable insights for future research and have significant implications for improving the reliability and security of social media platforms.

Paper I:

Video:

Awards & Laurels:

1.8	MOOC Course Recommendations and Knowledge Enhancement for Career Growth using AI/ML

Group Members: Bhavesh Janyani(D17B-21), Girish Khemchandani(D17B-28), Neha

Vaswani(D17B-64), Lavina Virwani(D17B-66)

Mentor: Prof. Sunita Suralkar

Abstract: The rise of Massive Open Online Courses (MOOCs) has transformed the way people access education and pursue their career goals. However, despite the many benefits of MOOCs, the high dropout rate and low student satisfaction levels remain a significant challenge. To address this issue, this paper presents a web-based platform called "MOOC Course Recommendations and Knowledge Enhancement for Career Growth using AI/ML".

The Q&A component allows users to ask questions and receive answers from knowledgeable experts in real-time, while the recommender system analyzes the answers and provides tailored course recommendations based on the user's specific needs and learning goals. The use of AI and ML algorithms enhances the accuracy and reliability of the recommendations, ensuring that users receive the best possible advice and guidance.

The proposed platform has the potential to revolutionize the way individuals approach their career growth and lifelong learning. By providing a unique solution to the challenges faced by learners in their quest for knowledge, the platform is expected to improve the learning experience and make the course selection process more efficient. This platform will become a valuable resource for learners, educators, and institutions, facilitating knowledge exchange and providing a platform for continuous learning and improvement.

In conclusion, "MOOC Course Recommendations and Knowledge Enhancement for Career Growth using AI/ML" represents a significant advancement in the field and has the potential to impact individuals and organizations alike, by providing a new and innovative approach to lifelong learning and career growth.

Paper I:

Video:

Awards & Laurels:

1.9 | Predicare - ML based Disease Diagnostic System

Group Members: Chirag Dayaramani(D17A-15), Disha Raghani(D17A-58), Laveena Kithani(D17A-37), Yash Kriplani(D17A-39)

Mentor: Mrs. Yugchhaya Galphat

Abstract: Staying healthy is directly proportional to productive and energetic life. A system can be modeled to maintain the health track of a person and to avoid further health issues.

Incorporating and integrating machine learning and artificial intelligence techniques in the medical sector can be of great benefit to heal millions of people's diseases and also predicting disease at an early stage so as to decrease the mortality statistics which are rapidly increasing day by day. Predicare: ML Based Disease Prediction system is based on predictive modeling that predicts the disease of the user based on the symptoms that the user provides as input to the system. The system analyzes the probability of the disease as an output hence predicting the vulnerability of the disease. The prediction model is introduced with different combinations of features and several known classification techniques. Predicare can be used by users visiting the website to monitor their regular health and to check if they are suffering from any chronic health disease by analyzing various symptoms and blood reports and hence indicating if there is a need to consult a doctor. Severity model is also made available for cardiologists in order to examine heart related issues along with consultation and recommendation features. Growth of ML has proved very advantageous in the field of medical health sector.

Paper I:

Video:

Awards & Laurels:

1.10 | Disaster Management System using Deep Learning

Group Members: Saurabh Bera (D17C-08) , Pranav Chaturvedi (D17C-13) , Pranav Gadhav (D17C-16) , Adarsh Singh (D17C-56)

Mentor: Mr. Richard Joseph

Abstract: Due to the increasingly damaging effects of climate change, natural disasters like hurricanes, earthquakes and tornadoes are having an extremely adverse effect on the lives of many communities. In such cases, it is important for disaster rescue agencies like National Disaster Response Force to devise a post disaster recovery strategy to save as many lives as possible. This activity requires the use of high quality aerial images captured from Unmanned Aerial Vehicles(UAVs).

In this project, we have proposed two deep learning models and an image processing approach that use an aerial image as an input and give an annotated aerial image as an output, where the buildings, the extent of their damage, the roads present and the objects blocking the roads are clearly visible. This will help disaster response agencies to act quickly and efficiently. For identifying and classifying the damage of the buildings present in the image, the xView2 dataset was used for training, whereas for identifying the roads in the image, the DeepGlobe

Road Extraction dataset was used.	
Paper I:	
Video:	
Awards & Laurels:	
2.	Big Data Analytics & Machine Learning
2.1	CMS Detector Quality Assurance using ML Methods - EXTENDED
Group Members: Aashish Nair (D17C, 43), Mihir Pamnani (D17C, 46), Sneha Karthik (D17C, 57), Akash Sonare (D17C, 58)	
Mentor: Dr. Nupur Giri and Mr. Richard Joseph	
<p>Abstract: In the CMS experiment at CERN, Geneva, a large number of HGICAL sensor modules are fabricated in advanced laboratories around the world. Each sensor module contains about 700 checkpoints for visual inspection thus making it almost impossible to carry out such inspection manually. As artificial intelligence is more and more widely used in manufacturing, traditional detection technologies are gradually being intelligent. In order to more accurately evaluate the checkpoints, we propose to use deep learning-based object detection techniques to detect manufacturing defects in testing large numbers of modules automatically. This task is difficult due to diverse defect appearances, ambiguous intraclass, and interclass distances. Due to recent technological advances, there has been a rise in automated visual inspections and intelligent quality assurance systems in manufacturing. In order to simplify this, we propose a deep-learning-based approach for defect diagnosis and subsequent quality assurance.</p> <p>keywords—Automated visual inspection, CMS, Object Detection, Yolov4, GNN.</p>	
Paper I:	
Video:	
Awards & Laurels:	
2.2	User Preference Recommendation System & Analytics for News Articles

Group Members: Vaidehi Bhagwat(D17A,10), Aishwarya Krishnamurthy(D17A,3), Himanshu Behra(D17B,9), Ikjot Khurana(D17B,30)

Mentor: Dr Gresha Bhatia

Abstract: With advancements in technology, the content space has changed and the major problem faced by the digital space is providing personalized content to users. This enables users to get more relevant content, increasing the time spent on the application. This is great for business as higher retention leads to more data being stored which in turn can be analyzed. This gives better business insights to enhance targeted marketing. This would solve the poor merchandising problem faced by businesses. The cycle continues and our project comes into the picture to streamline this process using machine learning. With the advent of digitization, there has been a change in traditional media. Through the means of software, we are able to read, share and interact with news articles on our smartphone devices. This has completely changed the game for News supplying houses because of the abundance of information available on the internet. Instead of orthodox print newspapers, people have started to prefer the convenience of mobile articles. The written structure of articles has also changed to comply with the fast and to-the- point inclination of the users. Finding niche articles with copious amounts of information is the problem faced by users and even news supply agencies. It is hence critical to analyze user data to carve out the perfect set of information. Users get a better user experience and from a business perspective, the agencies can target very specific content to the user and open up business opportunities

Paper I:

Video:

Awards & Laurels:

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2.3	Chat Analytics
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Group Members: Dipti Menghani (D17B-38), Payal Mangtani (D17B-37), Kumodh Kukreja(D17B-31), Payal Kukreja(D17C-32).

Mentor: Dr. Sujata Khedkar

Abstract: WhatsApp Chat Analytics is the process of analyzing data generated by WhatsApp conversations to extract insights and patterns that can be used to improve communication, marketing or customer service strategies. WhatsApp is a widely used instant messaging platform that allows users to send text, voice messages and media files in real time. To perform WhatsApp chat analytics, collect data from conversations, which may include metrics such as

message frequency, response time, and type of content exchanged. The data is then analyzed using a variety of tools and techniques, including natural language processing, sentiment analysis, and machine learning. Insights gained from WhatsApp chat analytics can help businesses better understand their customers, improve customer service, and develop more effective marketing strategies. For example, by analyzing the sentiment of a conversation, a company can identify where a customer might be dissatisfied and take steps to address it. Additionally, businesses can use WhatsApp chat analytics to track engagement metrics and adjust their communication strategies accordingly. Overall, WhatsApp Chat Analytics provides businesses with a powerful tool to understand their customers and improve their communication strategies, which can increase engagement, loyalty and ultimately business success.

Paper I:

Video:

Awards & Laurels:

2.4	Detection of the severity of TemporoMandibular Joint dysfunction using machine learning

Group Members: Rashmi Singh, Asmita Bhangare, Hrithika Singh, Shubhangi Zope.

Mentor: Dr. Mrs. Sharmila Sengupta

Abstract:

The jawbone and the skull are joined by the temporomandibular joint (TMJ), which functions as a sliding hinge. Temporomandibular disorders, commonly known as TMDs, include TMJ disorders. Both the jaw joint and the muscles that regulate jaw movement may experience pain. The project's goal is to use machine learning to develop a model that can identify the severity of temporomandibular joint dysfunction. The severity of the disorder will be predicted by the model using clinical data. Patients' symptoms and CBCT scans of their TMJ bones build up this clinical data. The objective of this project is to set up a platform for estimating the degree of TMJ dysfunction of a patient.

Paper I:

Video:

Awards & Laurels:

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2.5	Physical object identification in CMS experiment at CERN using ML approaches.
Group Members: Mayur Jaisinghani, Chirag Lundwani, Orijeet Mukherjee, Neeharika Nagori	
Mentor: Dr. Sharmila Sengupta, Mrs. Sunita Sahu	
Abstract: The Compact Muon Solenoid (CMS) at CERN is part of the world's largest particle accelerator, the Large Hadron Collider (LHC). In the LHC, the particles are accelerated to speeds close to the speed of light and collided. These collisions result in phenomena that help understanding the Standard Model to search for extra dimensions and particles that could make up dark matter. HGAL will easily be able to track the particle showers resulting from the collisions as it has 50 layers where the farthest traveling particle is the Muon which reaches till the 47th layer. The project is aimed at finding the charge of those muons released from the collisions of two photos in HL-LHC as it passes through the various layers of HGAL. Machine learning techniques like GNN (Graphical Neural networks) have been used to identify the charge of muon particles with respect to their coordinates and pixel intensity and Root software used to visualize various parameters.	
Paper I:	
Video:	
Awards & Laurels: 3rd place in technology day	
2.6	Analysis of Persona using Machine Learning
Group Members: Suresh Aydi, Siddhi Bhosale, Laveena Shewkani, Gaytri Aasija.	
Mentor: Dr. Prashant Kanade	
Abstract: The company globally hires 3.32 billion human beings everywhere in the world as of 2022. Selecting those many human beings is a large challenge. Companies now no longer search for the ability set preferred for the unique process position however additionally their personality and finally their character. Persona is what makes the personnel gifted and a hit of their expert in addition to non-public life. So, the organizations need to understand and apprehend the personality and character trends of the personnel. With the surge in populace the opposition has elevated and as a result there are numerous candidates for a selected process, so how does the organization pick	

the pleasant suit for the publication simply with the aid of studying the CV, therefore the personality evaluation is needed to pick the proper candidate. Going via the CVs manually and identifying the personality is hard therefore evaluation of the personality the usage of gadget mastering is a superb and time-saving substitute.

Paper I:

Video:

Awards & Laurels:

2.7	Heart Disease Prediction Using ML
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Group Members: Bharat Uttamchandani, Dhiraj Taneja, InderpalSingh Ramani, Paarth Kulkarni

Mentor: Mrs. Vidhya Zope

Abstract:

The prevalence of heart disease has increased significantly over the past few decades, making it a major public health concern. To address this issue, machine learning techniques have been utilized to develop models for heart disease prediction. In this project, we have developed an interface using Gradio that takes input values such as age, blood pressure, cholesterol level, etc. and predicts the likelihood of heart disease using different machine learning models. The models include logistic regression, SVM, decision tree, and random forest, which were trained on a dataset containing information on patients diagnosed with heart disease. The performance of each model was evaluated based on accuracy, precision, recall, and F1 score. The results showed that the SVM model had the highest accuracy of 89%, making it the most reliable model for heart disease prediction. The interface provides an easy-to-use tool for individuals to assess their risk of heart disease and take preventive measures to maintain a healthy lifestyle.

Paper I:

Video:

Awards & Laurels:

2.8	Early Detection of Parkinson's Disease Using Machine Learning
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Group Members: Priyal Agarwal, Vaishnavi Jadhav, Rutuja Patil, Vipin Talreja

Mentor: Mrs.Indu Dokare

Abstract: Parkinson's disease (PD) is a chronic degenerative disorder affecting specifically the nervous system and motor instructions in humans. Initial signs and symptoms which include muscle stiffness, tremors, stability disturbances, and difficulty in taking walks are considerably much less noticeable. Parkinson's Disease has been manually inspected and there is no accurate and feasible solution. MRI scans of the brain are used for the diagnosis of Parkinson's Disease. MRI scan-based PD detection cannot be a feasible solution for people in which radiation problems would be there. In addition, blood tests and CT scans no longer provide enough evidence for an early diagnosis. As a result, it is difficult for medical scientists to diagnose the onset of Parkinson's disease. However, spiral test and voice smearing provides early warning and can be successfully used to detect Parkinson's Disease. In this project, an image-based dataset of spirals drawn by people i.e, a spiral dataset and voice recording samples of individuals with Parkinson's disease and healthy individuals are examined with the aim of predicting PD. A comparative study of different predictive models will be performed. The algorithms used to develop the model with a spiral dataset are Random Forest, XG-Boost, K-Nearest Neighbor, Support Vector Machine, and Convolutional Neural Network.

Paper I:

Video:

Awards & Laurels:

2.9	Wireless extraction of Display Panel Data on complex machines using non-invasive and wireless approach with ML techniques
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Group Members: Ajay Nair, Manigandan Kasimani, J N Guru Akaash, Varun Tripathy

Mentor: Mrs. Priya R.L, Mrs. Nusrat Ansari

Abstract: Data collection and storage in information technology (IT) databases may be particularly challenging for many old social infrastructure systems, often known as operational technology (OT). Video cameras installed in front of the display panels are utilized in this project to record real-time video data. Optical Character Recognition (OCR) is a method that allows systems to recognise scripts or alphabets to be written in human readable format. The alphanumeric letters in the image are detected and recognised using an Optical Character Recognition (OCR) model trained using Deep Learning methods. Users can create their own Region of Interest (ROI) and apply OCR for Text Recognition. This would apply to all sorts of display units with varying designs and text sizes.

Paper I:	
Video:	
Awards & Laurels:	
2.10	Sentiment Analysis of Product-Based Reviews Using Machine Learning
Group Members: Nikita Ahuja(02),Komal Asrani(04),Tanya Bajaj(05)	
Mentor: Mrs.Abha Tewari	
<p>Abstract: Today, digital evaluations are essential for improving consumer communications across borders and influencing consumer purchasing behaviour. Consumers have a platform to share their experiences and offer actual insights regarding the performance of the goods to prospective purchasers thanks to e-commerce behemoths like Amazon, Flipkart, etc. Classifying reviews into positive and negative sentiment is necessary to derive useful insights from a big set of evaluations. A computational study called sentiment analysis is used to extract subjective information from texts. In this project, we aim to perform Sentiment Analysis of product based reviews. Data used In this project are online product reviews collected from “amazon.com”. We expect to do review-level categorization of review data with promising outcomes.</p>	
Paper I:	
Video:	
Awards & Laurels:	
2.11	Mental Health Prediction Using Machine Learning
Group Members: Vanshika Bajaj(06), Rishabh Bathija(07), Chandni Megnani (40), Jasmine Sawara(53)	
Mentor: Mrs. Nusrat Ansari	
<p>Abstract: The potential of machine learning in predicting mental health outcomes is investigated in this study. Two datasets were gathered: one of mental health patient</p>	

questionnaires and the other of information from MRI scans of Alzheimer’s patients. The datasets were preprocessed using techniques such as stop word removal and lemmatization, and the processed data was encoded for increased prediction accuracy. To find the highest performing model, we examined various algorithms such as Logistic Regression, Decision Tree, KNN (K-Nearest Neighbors), Adaboost, Random Forest, and Logistic Regression. The findings indicated that machine learning algorithms can predict mental health outcomes with high accuracy, and that adding demographic, behavioral, and psychological factors can improve prediction accuracy even more. The study emphasizes the significance of creating accessible and accurate mental health prediction tools, as well as the promise of machine learning in mental health evaluation.

Paper I:

Video:

Awards & Laurels:

2.12	SocialDotReal - Detection system for fake social media accounts
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Group Members: Harsh Lulla, Kunal Wadhvani, Yash Ahuja

Mentor: Mrs Sujata Khandaskar

Abstract: The explosive growth of social media has created new opportunities for communication and information sharing, but it has also led to the emergence of a significant problem: fake accounts. These accounts can spread misinformation, manipulate public opinion, and pose a threat to users' privacy and security. In this project, we present a method for detecting fake accounts on social media platforms. Our method leverages machine learning techniques and a comprehensive set of features to accurately distinguish fake accounts from genuine ones. We evaluate our method on a large dataset of social media accounts, and demonstrate its superior performance compared to state-of-the-art fake account detection methods. Our findings provide valuable insights for future research and have significant implications for improving the reliability and security of social media platforms.

Paper I:

Video:

Awards & Laurels:

2.13	Forecasting of Carbon emission due to Meat Industry
Group Members: Parth Wadke, Vivek Gonal, Divesh Watwani, Prithviraj Chavan	
Mentor: Mrs.Sunita Sahu	
<p>Abstract: All living and nonconscious things are a section of the scheme because of a rise within the range of vehicles, rapid population growth and industrialisation over the years, the carbon content within the atmosphere has risen at an associate degree exponential rate. Transportation, Industrialization and technological growth are beneficial to the modern world but are major concerns generating carbon footprint. Livestock and meat industry is a sector which is always overlooked when talking about carbon footprint. The Meat industry is considered to be generating over 14.50% of global carbon footprint. The objective of our project is to analyze carbon emission due to livestock and meat and develop a prediction model which will give us accurate predictions for the next coming years. These predictions will be visualized in different types of charts and graphs which will help the end user to refer to the predictions efficiently.</p>	
Paper I:	
Video:	
Awards & Laurels:	
2.14	Automated Investment Portfolio Recommendation
Group Members: Jahnvi Mulchandani, Shruti Koku, Aryan Gupta and Ruchika Dusija	
Mentor: Mrs. Mannat Daultani	
<p>Abstract: In today’s world, financial planning has become a necessity. With everything becoming expensive, saving costs has become a major priority. To make the most of your earnings and savings, you must become financially prudent. People that have a financial background know about financial planning but there is a large amount of the population that is unaware of the concept of investments and portfolio management. Learning the concept of investments and portfolio management requires some starting points. With the idea of addressing the “Where to begin?” question, we have proposed this system that recommends an initial investment portfolio, which can be used by people who have little to no knowledge of the types of returns and risks involved in this process, but nonetheless are willing to start planning their personal investment portfolios. Our portfolio recommendation system offers various investment options based on the level of risk the user is willing to accept. We have investments ranging from zero to high risk, and from short to long-term investments.</p>	

Paper I:	
Video:	
Awards & Laurels:	
3.	Internet of Things & Robotics
3.1	Smart Refrigerator
Group Members: Prium Rohera(D17A,60), Rounak Talreja(D17A,68), Kapish Madhwani(D17B,35), Kaustubh Keny(D17B,27)	
Mentor: Mrs. Pallavi Gangurde	
<p>Abstract: The refrigerator is an important part of preserving food in modular kitchens and shops. In the case of a commercial, having the necessary quantity to improve business is critical. The goal of this project is to transform a standard refrigerator into an Intelligent refrigerator by allowing it to prevent the spoilage of food resources, manage and utilise the food items most efficiently, help place orders for food items, create a database of recipes, recommend recipes and to create a virtual interactive environment between refrigerator system and the user, which is particularly significant. The proposed Internet of Things (IoT) system can detect food shortages by transmitting the number of available food items via mobile application. If the weight falls below a certain threshold, it notifies users to place an order or if the resources rot, the user gets notified to utilise the resources beforehand. The proposed system also employs classification and regression (prediction algorithms) to recommend seasonal fruits and vegetables to users.</p>	
Paper I:	
Video:	
Awards & Laurels:	
4.	Image Processing
4.1	HarGharSolar : Recognition of Potential Rooftop PhotoVoltaic Arrays using Geospatial Imagery and Extrapolation of Power Generation for Diverse Climate Zones.
Group Members: Tejas Mahajan, Juhi Chhatlani, Advait Bansode, Rushabh Rijhwani	

Mentor: Dr. Gresha Bhatia

Abstract: As solar energy has been recognized as an inexhaustible source of energy, the solar photovoltaic installation business has taken the lead in today's market. Nowadays, people are investing more in green energy due to its harmless and everlasting supply of energy and also its boundless applications. With the adaptation of solar panels on the building rooftops, people often fail to think of the total energy that will be generated from the solar panel and if the generated power is sufficient enough to fulfill the power requirements of the whole building. Different climate zones receive different amounts of sunlight and thus, solar energy generation varies in all regions. Artificial Intelligence has evolved to bring significant development in this field as it helps in detecting rooftops that have a potential for solar photovoltaic systems and also helps to efficiently detect how much energy can be generated using solar panels. Latest Deep Learning models like YOLO, EfficientNet, VGG ResNet, etc are able to detect rooftops using geospatial images of zones and models like U-Net, SegNet, etc are used to configure the solar photovoltaic system for the consumer. An additional model for the calculation of power generated considering different parameters like climate, and topography will be built using advanced AI techniques. The best-performing models will be finetuned and integrated with the front end to act as a one stop destination for the end user.

Paper I:

Video:

Awards & Laurels:

4.2 | **Lenspatrol: Detecting Anomalous Events**

Group Members: Shubham Zope, Nihar Kenny, Rakshit Deshmukh, Venkatesh Rallapalli

Mentor: Dr. Mrs. Sujata Khedkar

Abstract: The advent of technology and subsequent waves of technological modernization have had a massive impact on society today. Along with the development, there has been an increase in activities that can only be categorized as abnormalities or anomalies. Due to these anomalies, security has received the greatest importance in recent times. Setting up CCTVs to constantly monitor people and how they interact is a very common practice in most organizations. It is nearly impossible for the authorities to continuously review these surveillance films to determine whether the occurrences are suspicious or not because it takes continual attention from their staff. This is the issue being addressed here. The Proposed System uses the CCTV feed to detect abnormalities like Weapons, Theft, Fire, Masks, etc., and

upon detection, the respective authorities can be notified immediately. The surveillance footage is further analyzed to identify the busiest counter, person count, and queue analysis which is then summarized in a report for the management. Detection algorithms like CNN, ConvLSTM, Resnet, YoloV3, and YoloV5 have been trained and YoloV5 showed an accuracy of 95.5 % with a loss of 0.012.

Paper I:

Video:

Awards & Laurels:

4.3 **Using Histopathological Images to grade oral pre-cancer**

Group Members: Akhil Chakkungal, Samita Kanojia, Riya Shukla, Palak Garg

Mentor: Dr. Mrs. Sharmila Sengupta

Abstract: Early detection of oral cancer can be achieved through pre-cancer grading. It is an important task in prescribing necessary treatment and medication for the patients. Due to its high mortality and morbidity rates, oral cancer tends to be discovered at a later stage and is fatal to the patients. The pathologists manually stain and analyze the histopathological samples of the patients and it is a laborious and time-consuming process. Artificial intelligence approaches have a considerable impact in improving diagnostic accuracy in all fields of medicine. The oral pre-cancer features extracted for grading are cell nuclei size, nuclei intensity that is Hyperchromasia and cytoplasmic ratio from real-time dataset of histopathological images. The results are compared using several machine learning algorithms, out of which, random forest has an accuracy of 84.2%. This research aims to develop a diagnostic tool to aid medical practitioners for automatic and fast pre-cancer grading and establish the importance of early diagnosis of the disease.

Paper I:

Video:

Awards & Laurels:

4.4 **Activity Monitoring and Unusual Activity Detection for Elderly Homes**

Group Members: Manasvi Patwa, Bhavika Chattani, Sahil Deshmukh, Varnit Batheja

Mentor: Mrs. Geocey Shejy

Abstract: The number of older people in different countries is constantly increasing. Most of these people prefer to live independently. The objective of this project is to identify and detect unusual activity for an elderly person. Individuals spend the majority of their time in their home or workplace and many feel that these places are their sanctuaries. The information about the person is stored in a database. So in an emergency situation the neighbor can go through the details of the affected person and he/she can refer to all the details about the affected person. Machine learning techniques use the information to identify and reason about normal behavior in terms of recognized and forecasted activities. Once the abnormal behavior is identified as a threat, a message is sent to the neighbor or corresponding authorities. In most emergency cases, the elderly patient seeks in-patient care, which is very expensive and can be a serious financial burden on the patient if the hospital stay is prolonged, and it won't be affordable for everyone. The proposed work allows people to remain in their comfortable home environment rather than inexpensive and limited nursing homes or hospitals, ensuring maximum independence to the occupants. Therefore, an affordable and comprehensive healthcare solution with minimal workforce has much importance for long term health management and population. We make use of Artificial Intelligence, Machine Learning, and computer vision.

Paper I:

Video:

Awards & Laurels:

4.5 | **Hand Gesture Recognition for Disabled People**

Group Members: Rohit Manghani(36), Kartik Nagdev(41), Kirti Valechha (63)

Mentor: Mrs. Vidhya Zope

Abstract: Hand gesture is one of the methods used in sign language for non-verbal communication. It is most commonly used by deaf & dumb people who have hearing or speech problems to communicate among themselves or with normal people. The proposed system would be a real time system wherein live sign gestures would be processed using image processing. Then classifiers would be used to differentiate various signs and the translated output would be displaying text.

The project will be aimed at building a machine learning model that will be able to classify the various hand gestures used for fingerspelling in sign language. In this model, classification

machine learning algorithms will be trained using a set of image data and testing will be done on a set of data.

The purpose of the system will be to develop a system prototype that will be able to automatically recognize sign language to help deaf and dumb people to communicate more effectively with each other or normal people.

Paper I:

Video:

Awards & Laurels:

4.6 | **Analysis and Detection of Alzheimer's Disease using MRI**

Group Members: Disha Mehta, Aakash Mohite, Vaishnavi Shinde, Ritika Khatri

Mentor: Mrs. Indu Dokare

Abstract: Alzheimer's Disease is a severe neurological brain disorder. It destroys brain cells causing people to lose their memory, mental functions and ability to continue daily activities. To detect the severity level of Alzheimer's Disease will be a challenging task. Machine learning techniques can help to improve and automate the process for accurate diagnosis of Alzheimer's Disease. This proposed approach aims to determine the severity level of Alzheimer's Disease into Non Demented, Very Mild Demented, Mild Demented and Moderate Demented categories. The patients are classified based on the severity level of Alzheimer's Disease. This work is carried out on the Alzheimer MRI data set obtained from Kaggle. Three classification algorithms are investigated ANN, CNN and VGG19 out of which VGG19 is used for this proposed work, considering the AUC (Area under curve) 89.92%, Accuracy 67.44%, Precision 69.07% and recall 65.49% VGG19 architecture found to be suitable for classifying the severity level of Alzheimer's Disease.

Paper I:

Video:

Awards & Laurels:

4.7 | **Gujarati Script Recognition (GSR)**

Group Members: Shivoham Angal, Mrudul Parab, Rutvik Purohit, Dhruv Sachdev

Mentor: Dr. Mrs Rohini Temkar, Mrs Lifna C S

Abstract: Gujarati belongs to the genre of Devanagari scripts from the Indian subcontinent. Very little work is found in the literature for recognition of Indian language scripts. Optical character recognition is a method of the renovation of pictures of printed text, handwritten documents, and typewritten documents into a document recognized by the machine. This can be used for editing, reduction in storage space, etc. So, basically, it relates to the process of teaching and recognition of data. The sample and test images for the characters were obtained from digital images and from scanned images of printed Gujarati text. For recognizing words, the first characters are detected. Once characters are detected, we can detect words depending on the spacing between individual characters and ID assigned to each character. At the last comes the part of Natural Language Processing (NLP). Using NLP, computers understand the language. We are analyzing both Machine Learning approaches (like LSTM, KNN, etc.) and Deep Learning approaches (like CNN, Transfer Learning, etc.) to find the most suitable approach. For Gujarati News Articles CNN approach is implemented for removing images from them to achieve better accuracy by Machine Learning Model.

Paper I:

Video:

Awards & Laurels:

4.8 **Image to text summarization**

Group Members: Piyush Kataria(D17A), Kunal Godhwani(D17B), Varad Joshi(D17C), Jitesh Ladhani(D17C)

Mentor: Mrs. Mannat Doultani

Abstract: The project aims to summarize the image given to the model as input into synoptic phrases. Text summarization is the problem of creating a short, accurate, and succinct summary of a longer text document. The aim is to design a model which takes a vague image as its input and will try to channel what is exactly captured in the lenses. Using OCR we will extract the text present in the input image and model we generate the summary using the extracted text. Pytesseract and Tesseract-OCR libraries can help to recognize, identify the characters in the text and the Summarizer module will eventually generate the summary. Two types of input images are chosen.

a) computer generated text image. b) Handwritten text image.

Paper I:	
Video:	
Awards & Laurels:	
4.9	Hand Gesture Recognition
Group Members: Aryan Bedi , Chirag Matai , Dhruv Ahir	
Mentor: Mrs pallavi saindane	
<p>Abstract: A hand gesture recognition system was created to record the user's hand movements and, using the incoming data, recognize a gesture in a computer system. Numerous systems that are currently in use in the literature exclusively use spatial modeling to recognize individual gestures rather than employing temporal modeling to recognize the motion of gestures. Additionally, the current systems employ a previously acquired image as an input for gesture detection rather than being done in real time.</p> <p>We offer a hearing-impaired application. Our program will be helpful for talking with persons who are hearing-impaired since it will provide an interface since normal people cannot understand the sign language they use.</p> <p>He or she must utilize standardized sign language to communicate, and the application cleverly recognizes it and publishes it, simplifying our task. The program recognizes the language and displays the user's intended message.</p> <p>It makes it simpler for people who have hearing loss to communicate their message without any obstacles. Both the user and the person attempting to interpret the message benefit greatly from this.</p>	
Paper I:	
Video:	
Awards & Laurels:	
4.10	CrimeVerse: Virtual Approach for Crime Scene Reconstruction
Group Members: Gauri Mahajan, Jay Deshmukh, Srishti Shetty, Mrunmayee Waingankar	

Mentor: Mr. Richard Joseph

Abstract: We choose to apply modern technologies in order to enhance the caliber of homicide investigations. An electronic recreation of the crime scene is intended. Research on virtual settings and scenarios that can produce completely immersive alternate visual experiences has increased recently. The documentation, analysis, and presentation of a crime scene have all been done using a variety of 3D recording techniques. The precise scene recording offered by 3D data capture techniques is free from the spatial distortion effects present in 2D photographic recordings. Reconstruction can be done in a variety of ways. Photogrammetry, 3D laser scanning, RGB-D mapping, and 3D game engines are a few examples. In this project, we plan to implement using a Lidar scanner. We outline the data collection procedures for the 3D reconstruction of several scene types. The usefulness of each strategy is emphasized in a variety of scenarios of various types and scales. In this research, we describe a method for performing scene walkthroughs during witness or suspect interrogations using forensic 3D data combined with virtual reality. The purpose is to offer a technique for scene visits that will still display the original scene years after the incident. You may recreate these scene walkthroughs in VR, which let you see through the eyes of a witness by documenting their behavior and activities. These recordings enable later analysis and reconstruction, which aids in the investigation and comprehension of the incident. They can also be used as proof in court.

Paper I:

Video:

Awards & Laurels:

5. Networking & Security

5.1 Secure Multimedia Communication

Group Members: Aashish Raheja, Ashwin Pansare, Kartikey Verma, Karan Punjabi

Mentor: Dr. Prashant Kanade, Mrs. Yugchhaya Galphat

Abstract: The system under consideration aims to provide the users a real time off the grid secure and private multimedia communication system. The system will fulfill the main requirement of security claims by not incorporating any third party APIs or other services. This application is a cross platform messaging application with an End-to-End encryption service. The major goal is to enable data transfer of any kind of files including and not limited

to images, videos, documents. The most unique feature of this system would be the use of our very own cloud server without inclusion of any third party cloud servers.

Paper I:

Video:

Awards & Laurels:

5.2 | Vehicle Information Using Blockchain

Group Members: Shubham Goswami (D17C, 21), Laksh Lalwani (D17C, 34), Naman Tahilyani (D17C, 60), Dheeraj Yadav (D17C, 66)

Mentor: Prof. Mrs. Priya R. L

Abstract: The Regional Transport Office (RTO) in India is a government body responsible for enforcing motor vehicle regulations. Its functions include issuance of driving licenses, vehicle registration, collection of taxes and fees, and enforcing traffic laws. The RTO system has faced challenges such as irregularities and inefficiency, however, efforts have been made to improve the experience through digitization and online services. Despite these efforts, the system still faces issues such as long wait times and backlogs of pending applications.

The proposed model aims to track and record information about vehicles for traffic monitoring and ticket generation using IoT and blockchain technology. The process includes: (1) collecting data from various sensors from vehicles and signal cameras for traffic violations such as overspeeding or running red lights, (2) creating a blockchain for vehicle information and traffic rule violations, (3) using sensor data and camera footage to issue tickets with video proof for users to verify or contest, (4) queries on issued ticket by the accused is managed in a separate Complaint tracking Blockchain and ticket's status is updated accordingly, (5) using crash detection sensors and GPS to send an emergency message with location information to designated individuals appointed by the RTO.

Paper I:

Video:

Awards & Laurels:

5.3 | Automated Web Article Extraction based on RSS and Summarization with

	Pointer-Generator Networks
Group Members: Tejas Gala (D17C-17), Kaushal Jagasia (D17C-23), Tarun Mishra (D17C-42), Sohan Walawalkar (D17C-64)	
Mentor: Mrs. Abha Tewari	
<p>Abstract: The process of text summarization involves using natural language processing to condense information into a shorter, more concise version. The objective is to reduce the size of the original document while still retaining its important information. This paper conducts a comparison of different text summarization methods, including extractive and abstractive techniques. It also provides a categorization of summarization systems and explores the use of statistical and linguistic methods for summarization. Extractive and abstractive are the two main techniques of automatic text summarization. Abstractive is more accurate than extractive ones because it considers all the core ideas and will distill these into a short consumable text. The pointer-generator network is a state-of-the-art method for abstractive summarization, it produces more fluent summaries and solves two common shortcomings of automated summarization - reproducing factual details inaccurately and phrase repetition.</p>	
Paper I:	
Video:	
Awards & Laurels:	
5.4	Decentralised Banking Services Using Blockchain
Group Members: Harsh Bhat(11), Yash Jawale(22), Gourab Bank(05), Raturaj Wairkar(68)	
Mentor: Mr. Sanjay Mirchandani	
<p>Abstract: Blockchain based crypto based currencies have made it possible to implement a fund transfer system in a more efficient, hassle-free and secure way. The present banking system contains human intervention at many stages wherein system users can modify bank details, bank balance in a fraudulent way. In the classical banking system, users have to wait for a longer time to deposit and withdraw money. A decentralized banking system allows a user to carry out various transactions and manage one's own data securely. Thus, a decentralized banking system has no room for fraudulent activities and causes no capital loss. The proposed system has three functionalities: User Wallet, a lending platform and a trading platform. The lending platform consists of market funds of all the tokens from which every user can buy a specific amount of tokens. User wallet contains transaction history along with</p>	

the amount of tokens sent. The trading platform consists of a live price chart of ZB/Eth Thus, users can borrow or lend money from their home or workplace within moments.

Paper I:

Video:

Awards & Laurels:

5.5	Food Supply Chain Management using Blockchain
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Group Members: Nirmity Sali(52), Srushti Biwalkar(10), Nimisha Khadilkar(28), Amisha Swamy(59)

Mentor: Mrs. Sunita Sahu

Abstract: Blockchain can provide a permanent, shareable, auditable record of products through their supply chain, which improves product traceability, authenticity, and legality in a more cost-effective way. By making the use of blockchain we can generate a ledger where each processing unit will make the transactions in the system and all the data related to the processing of products made at that unit is appended easily to the blockchain. By doing this, we are creating a tamper free ledger which is used to trace the processing details of the product in a really fast and cost effective manner. We are here, creating a peer to peer network of different systems which will keep on making the transactions and the data will be stored in the ledger. A server will be there to monitor the transactions and to trace the product details if requested by the system administrator or by the end user. There will be a backup server also which will take the command of the requests once the main server goes down and it also maintains a copy of the whole data. In this way it is feasible to trace the processing details of a product, once the unique identity of the product is provided to the server.

Paper I:

Video:

Awards & Laurels:

5.6	MedEx - Secured Medical Report Management using Blockchain Techonolgy
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Group Members: Chirag Parchani(D17B-45), Gulam Mohammad Ali(D17B-19), Rohan Ghume(D17A-22)

Mentor: Mrs.Veena Trivedi

Abstract: MedEx stands for Medical Exchange which means information exchange of medical reports. It aims to securely share patients' information such as their medical history and health-related issues. A patient holds on to so many reports from different hospitals and each report consists of different data so our system makes things simple. Our System is a decentralized web app that will consist of patient, doctor, and diagnostic center profiles. At the patient's end, the patient will make a profile of his/her own. At the doctor's end, they can register using their details such as Hospital Id, Hospital Name, Doctor Id, Doctor Name, Specialist, etc... Similarly, the Diagnostic Center registers and can upload the patient's details which will be rendered at the patient's end. We are trying to achieve immutability, transparency, and security using Blockchain Technology.

Paper I:

Video:

Awards & Laurels:

6.	Cloud Computing
6.1	
7.	Application Design & Product Development
7.1	MetaMart

Group Members: Yashraj Desai(D17B-15), Shreyas Poojari(D17B-48), Mihir Rane(D17B-53), Aniket Dewnani(D17B-16)

Mentor: Dr. Nupur Giri

Abstract:

The metaverse is expected to transform every aspect of our lives, including the way we shop online. According to the Metaverse in E-commerce Market report, the predicted growth of the metaverse in the e-commerce market share, from 2021 to 2026, is more than \$60 billion at a progressing CAGR of about 36%. The key factor driving the growth of the metaverse in the e-commerce market is the growing popularity of AR technology. Let's look through the main insights of the report to find out how the metaverse is evolving and what opportunities it opens

up for e-commerce businesses and consumers.

One of the key factors driving the growth of the metaverse in the e-commerce market is the growing popularity of Augmented Reality. This makes online shopping more convenient for the buyer and helps e-commerce businesses minimize returns and attract more potential customers to their brand.

With the metaverse, e-commerce businesses will be able to provide shoppers with a highly personalized digital experience. In the field of e-commerce, the metaverse will deliver a completely advanced virtual reality. In fact, online shoppers will be able to engage with the products of their choice in real-time using their own virtual avatar. If an e-commerce company uses the metaverse to build a digital shop, customers will be able to enter, explore, and check out the brand's items. Virtual stores in the metaverse will become a massive hit in the e-commerce industry, contributing to market growth during the forecast period.

Paper I:

Video:

Awards & Laurels:

7.2	Pehchaan: A Touchless Attendance System

Group Members: Garv Jhangiani(D17A 30), Prerak Moolchandani(D17A), Muskan Hassanandani(D17A 25), Shreya Hegde(D17A 26)

Mentor: Dr. Gresha Bhatia, Mrs. Abha Tewari

Abstract: With the Coronavirus pandemic taking its toll all over the world, and social distancing measures being adopted, there is an urgent need to digitise all the processes for the smooth functioning of organisations. Thus, Pehchaan presents a no-contact system for recording the attendance of entities by verifying face and voice. It makes use of low-cost ESP microcontrollers with a camera and microphone module to extract face measurements using a Deep Convolutional Neural Network and apply Mel Frequency Cepstrum techniques to the audio files. We verify the entities' claim by comparing the similarity with the encodings stored in the database. We are using wifi networks to connect ESP with the backend server. Face and voice recognition together act as two-factor verification and an admin will be able to access the records of a particular day and time and thus would be able to capture the attendance without any manual effort.

Paper I:**Video:****Awards & Laurels:**

7.3	This-Abled: An Aid to get Paid

Group Members: Minal Katware, Gunjan Lalwani, Mohit Lalwani, Abhishek Patwardhan

Mentor: Dr. Gresha Bhatia

Abstract: Our website “This-Abled” aims to provide aid to specially-abled students by creating a web-based job search portal especially designed for the physically challenged. In order to ease the experience for the disabled, we will provide gesture control to navigate across the website. This responsive and dynamic website will help the needy and physically disabled get a job and get a chance to live an independent life. While on the other hand, the employer will get a needy and hardworking employee. The website will also have a separate section for education where special students can learn certain courses according to the requirements of the employer or company.

Paper I:**Video:****Awards & Laurels:**

7.4	kisaan- multiservice app for farmers

Group Members: Shrushti Govindwar(D17C-22), Sonali Bodhwani(D17C-11), Kanchan Nathani(D17C-44), Shruti Mehta(D17C-41)

Mentor: Dr. Prashant Kanade

Abstract: India is one of the most populous nations in the world, and more than 58% of its people work in agriculture. The goal is to provide a tool that farmers may use to ease some of the basic difficulties associated with farming. Farmers regularly grow the same crops, and instead of using the proper quality and quantity of pesticides and fertilizers, they use random pesticides and fertilizers, which reduce crop production and cause soil pollution and

acidification. A web application utilizing machine learning methods is created to address these problems, and it will benefit farmers in a variety of ways. A web application will suggest the best crop for a certain plot of land. based on the content, weather conditions, and time of year. Early diagnosis of plant diseases is the answer to halting the losses in agricultural product productivity and quantity. Examining the distinctly observable patterns on plant leaves is part of the research on plant diseases. In order to detect plant illnesses in a sustainable way, image processing is used rather than directly examining the plants themselves. The system will focus on finding solutions to issues like some farmers' inability to purchase expensive tools for their fields because they prove to be budget busters, significant yield and quality constraints like plant diseases that result in enormous economic losses, farmers' ignorance of crop yield maximization and crop rotation techniques, etc.

Paper I:

Video:

Awards & Laurels:

7.5	EZfinance
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Group Members: Madhav Bhutada(D17C-09), Bhavishya Khanchandani(D17C-30), Vishesh Sachdev(D17C-51), Bhajan Watwani(D17C-65)

Mentor: Dr. Dashrath Mane

Abstract: This study aims to take a closer look at decentralized finance (DeFi) lending, specifically through the platform EZFinance. EZFinance is a type of lending system that allows people to lend and borrow money using cryptocurrency. Unlike traditional banks, DeFi lending allows anyone to act as a lender and earn interest on their assets. EZFinance's platform is designed to be transparent, open-source, and easy to use. It utilizes lending pools, where users can add their assets and have them quickly loaned out to borrowers through the use of smart contracts. This is a different and efficient way to lend and borrow money compared to the traditional banking system.

Paper I:

Video:

Awards & Laurels:

7.6	Kissan Konnect - Smart Farming App
Group Members: Atharva Kathane(D17C), Harsh Khairajani(D17C), Amol mali(D17C), Manthan Pawar(D17C)	
Mentor: Mrs. Rohini Temkar	
<p>Abstract: Agriculture is the basic economic backbone of every country. India being the developing country has agriculture as its main occupation. Almost 50% of the population has agriculture as their main occupation. The idea is to develop an application that will be useful for farmers and reduce their dependencies. Farmers today follow traditional agriculture cultivation methods. Cultivating same crop repeatedly and that results in degradation of the soil quality. To solve such issues and more we have developed web application. The Application will recommend the best crop to be yielded according to the weather, soil type, rainfall, temperature, humidity and pH. Another important feature that has been implemented is the disease detection module. The proposed machine learning model will scan the images uploaded by the farmers and diagnose the disease. Some farmers do not own the modern tools due to the cost. The proposed solution for that problem is the "tool rental module". In this way the application is able to make significant contribution to the lives of the farmers and increase the crop cultivation.</p>	
Paper I:	
Video:	
Awards & Laurels:	
7.7	Smart Ride Sharing
Group Members: Manish Khilwani (D17B-29) , Vijay Begwani (D17B-08) , Piyush Nihalani (D17B-42)	
Mentor: Mrs. Geocey Shejy	
<p>Abstract: Ride sharing is a popular concept where individuals share a ride to a common destination. The rise of ride-sharing platforms such as Uber and Lyft has made it easier than ever for people to share rides and save money on transportation costs. However, these platforms are centralized, meaning that they are controlled by a single company that takes a cut of the fare. Blockchain technology offers a decentralized alternative to traditional ride-sharing</p>	

platforms. A blockchain is a distributed ledger that can record transactions between parties in a secure, transparent, and tamper-proof manner. By using a blockchain based ride-sharing platform, users can connect directly with each other and share rides without the need for a central intermediary. There are several benefits to using a blockchain-based ridesharing platform. First, it can reduce the cost of transactions by eliminating the need for a centralized intermediary. Second, it can increase transparency and trust by providing a tamperproof record of transactions. Third, it can provide more control to users over their data and privacy.

Paper I:

Video:

Awards & Laurels:

7.8	Sahayata - A System to promote Inclusivity
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Group Members: Riya Ranglani (D17C, 49), Niyanti Padave (D17C, 45), Sakshi Talreja (D17C, 61), Anand Tekwani (D17C, 62)

Mentor: Mrs. Priya R.L

Abstract: Transgender may include those who identify as being trans-sexual, crossdressers, androgynous, bi-gender, no-gender, or multi-gender, and a growing number of people who do not identify as belonging to any gender category at all. For some third-gender individuals, the discomfort with social gender roles is accompanied by a profound sense of mismatch of the physical body to their internal bodily experience. This body dysphoria causes significant distress, negatively impacts daily functioning and well-being, and requires medical services in order to realign the body with the self.

In this project, we are targeting the Transgender community, their employment, and education, with an aim to provide an information and support platform for them. We are providing an online platform that could cater to the needs of the transgender community. The e-learning will offer resourceful courses that will help to leverage their skills in various fields professionally. And the employment will be given according to the skills they develop and courses they complete.

Paper I:

Video:	
Awards & Laurels:	
7.9	Tarjama : The Kashmiri Translator
Group Members: Varsha Jawrani(D17B,23), Aman Kachru(D17B,24), Komal Sethiya(D17B,55)	
Mentor: Ms. Lifna CS	
<p>Abstract: Living in a multilingual country it is necessary to have a tool to translate one language into another for better understanding of cultures and for better communication. There is a lot of research that has been performed on recognition of Indian scripts like Bengali, Devanagari, and Urdu and so many algorithms and systems have been developed for recognizing such languages including the most common google translator. Nevertheless, no such algorithm or system has been developed for recognizing Kashmiri script. So “Tarjama” aims to translate kashmiri language into other languages to an extent that others can understand the language. Furthermore this project will help the society to recognise the importance of the kashmiri language. As it is said that to study any culture we need to study their language, so by making this machine learning model based project we are hoping to bring light to the long lost Kashmiri culture.</p>	
Paper I:	
Video:	
Awards & Laurels:	
7.10	Automated Investment Portfolio Recommendation
Group Members: Jahnvi Mulchandani(D17A), Shruti Koku(D17A), Ruchika Dusija(D17A), Aryan Gupta(D17A)	
Mentor: Mrs Mannat Doultani	
<p>Abstract: In today’s world, financial planning has become a necessity. With everything becoming expensive, saving costs has become a major priority. To make the most of</p>	

your earnings and savings, you must become financially prudent. People that have a financial background know about financial planning but there is a large amount of the population that is unaware of the concept of investments and portfolio management. Learning the concept of investments and portfolio management requires some starting points. With the idea of addressing the “Where to begin?” question, we have proposed this system that recommends an initial investment portfolio, which can be used by people who have little to no knowledge of the types of returns and risks involved in this process, but nonetheless are willing to start planning their personal investment portfolios. Our portfolio recommendation system offers various investment options based on the level of risk the user is willing to accept. We have investments ranging from zero to high risk, and from short to long-term investments.

Paper I:

Video:

Awards & Laurels:

7.11	Shodhak - A Credit Card Fraud Detection System
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Group Members: Yash Lakhani(D17B,33), Hitesh Ahuja(D17C,01), Saurabh Lalwani(D17C,), Aditya Khomane(D17A, 36)

Mentor: Mrs. Pallavi Gangurde

Abstract: The use of credit cards for online purchases has increased due to the growth of the e-commerce industry, resulting in an increase in credit card fraud. Machine learning is key to detecting fraud in credit card transactions, and banks are using various methods to predict fraudulent transactions by using past data and new features to increase predictive power. Logistic regression, decision tree, and random forest methods were tested for credit card fraud detection using a dataset of more than 70,000 credit card transactions from a European bank. The dataset [10] was unbalanced with only 0.172% fraudulent transactions, so it was balanced using oversampling, resulting in a 60% fraudulent transaction and 40% true transaction distribution. The techniques were implemented in Python and performance was evaluated based on sensitivity, specificity, accuracy and error rate. The goal of the project was to detect 100% of fraudulent transactions while minimizing fraud misclassifications.

Paper I:

Video:

Awards & Laurels:	
7.12	Grow more
Group Members: ,Sakshi Ailsinghani(02), Khushboo Bajaj(06), Anisha Dhameja(18), Karan Rohra(61)	
Mentor: Mrs Sunits Suralkar	
<p>Abstract: In today's economy, there is a profound impact of the stock market or equity market. Prediction of stock prices is extremely complex, chaotic, and the presence of a dynamic environment makes it a great challenge. Behavioral finance suggests that the decision-making process of investors is to a very great extent influenced by the emotions and sentiments in response to a particular news. Thus, to support the decisions of the investors, we have presented an approach combining two distinct fields for analysis of stock exchange. The system combines price prediction based on historical and real-time data along with news analysis. LSTM (Long Short-Term Memory) is used for predicting. It takes the latest trading information and analysis indicators as its input. For news analysis, only the relevant and live news is collected from a large set of business news. The filtered news is analyzed to predict sentiment around companies. The results of both analyses are integrated together to get a response which gives a recommendation for future increases.</p>	
Paper I:	
Video:	
Awards & Laurels:	
7.13	Smart-Eye:Guidance system for the visually impaired
Group Members: Abdul Hannan Gharade, Hema Gallani, Bhavesh Menghwani, Palash Mandhan	
Mentor: Mrs. Sujata Khandaskar	
<p>Abstract: Blindness is a very common disability among many disabilities. According to the World Health Organization (WHO), there are 285 million people with visual impairments.A blind person walking in an unfamiliar environment faces many problems, this issue may be of</p>	

identifying true obstacles or may be of identifying potholes, bumps in their way. A visually impaired person wishes absolution to assist him triumph over issues in navigation because of his disability. The need for a system that can help people with special needs is felt important enough to support ease of activity for these people. This research proposes a mobile application-based system that guides someone to walk in a straight line using the smartphone's motion sensors and audio-based guidance.

Paper I:

Video:

Awards & Laurels:

7.14	GrowSkill: A platform to upskill and job search
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Group Members: Aashutosh Baraskar (D17A 07), Soham Das(D17A 14), Yogesh Khatri(D17A 35), Meet Patel(D17A 56)

Mentor: Mrs. Pallavi Saindane

Abstract: Can everyone get their job in one attempt? Does everyone have the skills or training required for a job? Can the person get the job without the required skills? In simple words skills and training are required for getting a job. So to tackle this problem we have developed a web portal. The main motive of our project is to connect the peoples and the organizations as well as providing the people with the required skills. There are various existing systems available which either provide skills and training or connect the people and the organization but not both. Thus this portal combines the functionality of both. We are also trying to introduce technologies like ML and NLP so the portal can become more user friendly. This project consists of two modules i.e Skills Section and The job portal section. In the skills section the courses will be provided to the users which can be paid or unpaid. These courses will be provided by organizations or trainers. The job portal section will basically recommend the jobs based on the skills provided by the user in the resume. Thus the resume needs to be updated. These skills will be parsed using a resume parser. The interviewer would be able to take the interview on these portals using video conference functionality. Technologies that we would be using include HTML, CSS, REACT JS, MONGODB, PYTHON etc.

Paper I:

Video:

Awards & Laurels:	

I	T.E. Projects
1.	AI, Deep Learning & DWM
1.1	Red Teaming and VAPT
Group Members: Anuj Bagad, Sanjana Bhojwani, Yashvi Dhar, Japneet Rajput	
Mentor: Dr Mrs Nupur Giri	
<p>Abstract: Software as a service (SaaS) is a software distribution model in which a cloud provider hosts applications and makes them available to end users over the internet. Red teaming is similar to ethical hacking, during which actors don't attempt any actual harm but instead hack into systems to uncover vulnerabilities with the goal of improving defences. Red teaming is based on the idea that a company can't really know how secure its systems are until they are attacked.</p> <p>Our project is a collaborative initiative in association with DeepCytes, a Cyber intelligence Company focussing on Security Orchestration to combat cyber Bullying, breaches through cutting edge investigations, training and forensics. In this model we are trying to make a platform to automate the process of Red teaming to ensure quick and real time vulnerability analysis.</p>	
Paper I:	
Video:	
Awards & Laurels:	
1.2	Mental Wellness - Mind Matters
Group Members: Om Madat, Figo Cardozo, Vansh Pahuja, Drishti Samvedi	
Mentor: Dr. Mrs. Gresha Bhatia	
<p>Abstract: Many people in our busy society are subjected to circumstances where mental stress is inevitable. As a result, people encounter a variety of mental health issues, some of which may develop into chronic mental diseases. As mental health issues are stereotyped, people with these conditions usually wish to hide their health difficulties. The majority of them are in a state of denial, which might lead to extremely significant societal issues since people who have mental health issues will often acquire mental diseases and may be dangerous to both themselves and those around them as a result. It's critical to give those with mental health difficulties the appropriate care and drugs. It is extremely possible that if a person's mental state can be easily monitored and evaluated, their mental health disorders may be discovered very early on and are thus treatable and curable. This project's contribution is a web-based system for mental health consulting. The system is designed to be able to dynamically generate user interfaces from the initial state to reach a decision during the consultation process.</p>	

Paper I:	
Video:	
Awards & Laurels:	
1.3	Prediction of mental health using social media with prescription audit
Group Members: Yash Narkhede, Aditya Nehete, Sanket Jaiswal, Swapnil Sakpal	
Mentor: Dr. Mrs. Gresha Bhatia	
Abstract: From the last decade, a major increase in social media implications might be discovered within the context of e-health. Doctors square measure mistreatment of patient's post and their feedback on social media platforms to diagnose their infectious diseases. However, there are very few studies that have leveraged the capabilities of ML algo to classify patient's mental disorders. These studies square measure restricted to an outsized range of posts and relevant comments that might be thought of threat to the effectiveness of their projected strategies. The solution would contemplate the identification of the psychological state of the user and supply a prescription audit which is able to facilitate the user in up thier psychological state.	
Paper I:	
Video:	
Awards & Laurels:	
1.4	Court Cases Priority Scheduling
Group Members: Malhar Kajale, Nimish Chidrawar, Rahul Motwani, Mohit Shahdadpuri	
Mentor: Dr. Mrs. Sujata Khedkar	
Abstract: Court case priority scheduling is an attempt to revolutionise the Indian Judiciary by making it to dispose of more cases in less time, that too more efficiently and in a more paced-manner. This will be done by making priority-wise schedules of cases with cutting-edge technologies like ML/AI. These technologies have critical efficiency and accuracy, also they save time and resources. This project aims to take into consideration various factors which can influence the prioritisation of the cases. Current systems take into consideration the case information that is extracted directly in native form. But this project will also include the factors which are analysed from the case document details and also the experience and availability of the Judges.	
Paper I:	
Video:	

Awards & Laurels:

1.5	Real Estate Cost Prediction
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Group Members:Sachin Choudhary, Harsh Karira, Siddhant Kodolkar, Sahil Madhyan**Mentor:** Mrs. Geocey Shejy

Abstract: Both individuals and real estate companies buy and sell homes. Individuals buy for habitation or as an investment, while companies buy to operate. Everyone should receive what they pay for in both cases. Housing market overvaluation and undervaluation have always been problems, and there aren't enough effective detection methods. A primary pass is given by broad indicators like house/real estate price-to-rent ratios. However, a thorough evaluation and decision-making are required to resolve this matter. Here is where machine learning comes into play. By feeding a model with hundreds of thousands of data points, a solution that is both powerful enough to reliably predict pricing and flexible enough to meet everyone's demands may be created

Paper I:**Video:****Awards & Laurels:**

1.6	I-Detox
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Group Members:Athurva Sawant, Varun Salvi, Muskan Chabbria, Divesh Chodda**Mentor:** Ms.Geocey Shejy

Abstract: Internet addiction refers to excessive internet use that interferes with daily life. Due to its negative impact on college students' study and life, discovering students' internet addiction tendencies and making correct guidance for them timely is necessary. In this system, we provide an approach to estimating a person's internet addiction levels using their behavior data on the system. In detail, we consider a person's addiction to the internet as a hidden variable that affects students' daily time online together with other behavior. By predicting a person's daily time online, we will find a person's internet addiction levels. Finally, extensive experiments are conducted on a real-world dataset. The experimental results show the effectiveness of our method, and it is also consistent with some psychological findings. "I-detox" aims to provide real-time analysis of the exact number of websites visited by the user, giving them the freedom to foresee the probable results given the lack of schedule one follows while browsing the internet.

Paper I:	
Video:	
Awards & Laurels:	
1.7	Understanding Consumers Perception: E-Commerce Product Reviews
Group Members: Chitra Atlani, Nikita Narwani, Navin Idnani, Tammana Bathija	
Mentor: Dr. Dashrath Mane	
<p>Abstract: The objective of sentiment analysis for E-Commerce Product review is to extract subjective information from text data and determine the polarity of the sentiment expressed in the text. In eCommerce, product reviews play a crucial role in shaping the perception of the brand, influencing purchase decisions, and identifying areas for improvement. With the help of sentiment analysis, eCommerce companies can gain insights into customer opinions, identify trends, and improve their products and services accordingly.</p>	
Paper I:	
Video:	
Awards & Laurels:	
1.8	Auto markup code from sketches
Group Members: Neeraj Chawla, Abhishek Chhabria, Ayush Jain, Chaitanya Limaye	
Mentor: Prof. Vidya Zope	
<p>Abstract: The process of web development involves various stages, including designing and coding the website. However, the process of manually converting the wireframe to HTML code can be tedious and time-consuming, leading to repetitive work.</p> <p>To simplify this process, a proposed machine learning model can automate the conversion of wireframes to HTML code. This significantly reduces the time and effort required to create boilerplate code for a website, enabling developers to test different designs and layouts.</p> <p>In addition to web development, user interface (UI) design is a crucial aspect of software development. The model is trained on a custom database of wireframe sketches and their corresponding code.</p>	
Paper I:	

Video:	
Awards & Laurels:	
1.9	Suraksha - Health Insurance Claim Analysis
Group Members: Prathamesh Thakur, Shreyas Sawamt, Hariharan Iyer	
Mentor: Mrs. Priya R.L.	
<p>Abstract: The arrival of the digital era has made almost all the sectors of a country paperless. The Internet is used to grow the business and is also used to ease out the various processes which were earlier considered to be tedious. Most of the banks, financial institutions, government etc. have reduced over the window transactions and emphasize on online transactions. This has aided in keeping a thorough record of various transactions and has improved the efficiency tremendously. Most of the insurance companies are offering policies online and the premium can also be paid without the involvement of any third party in between. This saves time and allows both ends a hassle-free experience. Nowadays the hospitals have started using the same digital techniques in-order to maintain the records of patients and their health insurance policies. This paper focuses on the digitization of the health and insurance sector which will reduce the burden on the patients and make it easy for the various other stakeholders to analyze and process them simultaneously.</p>	
Paper I:	
Video:	
Awards & Laurels:	
1.10	Dream Team Analyzer and Predictor for Fantasy Premier League.
Group Members: Kesar Jotwani , Gaurav Amarnani, Sakshi Shahdadpuri , Kaplesh Mulchandani	
Mentor: Mrs. Lifna C. S + Manisha Mathur (Co-Guide)	
<p>Abstract: This system will focus on generating a FPL Team for the Official Fantasy Premier League using various Algorithms. It will implement basic models for calculations of the best team and will also have additional models with parameters that aren't provided by the Official FPL Website but will be added by our own system which makes it much more accurate and unique.</p>	
Paper I:	
Video:	

Awards & Laurels:

1.11	Virtual Race Strategy Engineer
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Group Members: Aaryan Manawat, Utsav Gavli, Kaustubha Sahu, Abhiman Singh**Mentor:** Mrs. Lifna C. S

Abstract: A circuit motorsport like Formula 1, race strategy helps to finish the race in the best possible position by optimally determining the pit stops. Depending on the racing series, pit stops are needed to replace worn-out tires, refuel the car, change drivers, or repair the car. Assuming a race without opponents and considering only tire degradation, the optimal race strategy can be determined by a quadratic optimization problem, but in high-class motorsport this simplified approach is not sufficient. Comprehensive race simulations are used to evaluate the outcome of different strategic options. In such simulations, it is therefore desirable to automate the strategy decisions, for better handling and greater realism. It is against this background that we present a virtual strategy engineer (VSE) based on different artificial neural networks. Our research will be focused on the Formula 1 racing series, the model will help decide whether a driver should make a pit stop and which tire compound to fit. The results show that the VSE makes reasonable decisions and reacts to the particular race situation. The integration of the VSE into a race simulation is presented, and the effects are analyzed in an example race.

Paper I:**Video:****Awards & Laurels:**

1.12	Financial Literacy Chatbot
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Group Members: Gauri Nagral, Kritika Yadav, Yashraj Mulwani, Bhavesh Bhatia**Mentor:** Mrs. Abha Tewari

Abstract: A Financial Literacy chatbot based on Artificial Intelligence, Machine Learning, NLP (Natural Language Processing) technologies and many modern frameworks, will help to provide a user-friendly and an accurate solution to the problem and queries. Being a very interactive chatbot, more data would be collected from the user and with proper processing using the technologies mentioned above, the user can get awareness as well as guidance to certain Government related schemes as well as other investing options. Using NLP, we also deem to provide a beginner friendly summary of the documents related to the schemes and help the user to get a clear guidance. We also aim at implementing voice commands as inputs as well as outputs as advanced features. Also, we aim at making this project a successful multi-lingual prospect as well.

Paper I:

Video:

Awards & Laurels:

1.13 | Annapoorna-Food For All

Group Members: Vanshika Thakur, Manav Valecha, Sahil Ramchandani, Deepali Duseja

Mentor: Mrs.Abha Tewari

Abstract: Wasting food is a common problem in our society. We have identified the use of mobile technology to reduce food waste management and built an android application that allows individual user or restaurants to donate and share their foods and leftovers with people in need.

Paper I:

Video:

Awards & Laurels:

1.14 | MooTracker-Cattle Tracking system

Group Members: Vishakha Kulkarni, Madhura Mhatre, Paras Kumar Panchal, Ananya Pandey

Mentor: Mr Richard Joseph

Abstract: The objective of this study is to develop a cattle monitoring system for tracking cattle combating rustling in extensive grazing areas, grazing reserves, grazing routes, and ranches. It will also consist of a health monitoring system to continuously check the health of individual cattle, and easily diagnose and treat sick cattle as early as possible.

Paper I:

Video:

Awards & Laurels:

2. Big Data Analytics & Machine Learning

2.1 Digital Forensics

Group Members: Manasi Shah, Kaushik Sahasranaman , Riya Nadagire , Chaitanya Sondur

Mentor: Dr. Nupur Giri

Abstract: Our project aims to develop a SaaS platform to conduct corroborations like research piping, physical forensic evidence and digital forensics. Even in the age of the Internet and digital communication, paper is used extensively as an important carrier of information. Technological advances, however, have made the printed document easy to modify for malicious purposes. Therefore, document authenticity plays an important role in forensic science where documents are disputed in a court of law. In fact, ‘questioned document examination’ (QDE) has become an important discipline within forensic science. QDE deals with scientific techniques that can provide evidence about a suspicious or questionable document. Digital forensics is a branch of forensic science that focuses on identifying, acquiring, processing, analyzing, and reporting on data stored electronically. Electronic evidence is a component of almost all criminal activities and digital forensics support is crucial for law enforcement investigations. Mobile device forensics is a branch of digital forensics relating to recovery of digital evidence or data from a mobile device under forensically sound conditions. Audio analysis is a process of transforming, exploring, and interpreting audio signals recorded by digital devices. Aiming at understanding sound data, it applies a range of technologies. Audio analysis has already gained broad adoption in various industries, from entertainment to healthcare to manufacturing.

Paper I:

Video:

Awards & Laurels:

2.2 Flash Flood Prediction

Group Members: Harsh Deshmukh, Tanmay Damle, Digvijay Kocharekar, Anish Nair

Mentor: Dr. Sujata Khedkar

Abstract: The societal impacts of flash floods are more significant than any other weather-related hazard. Flash floods are often manifested in the form of infrastructure damage, flooding roadways and bridges, creating deadly hazards to motorists and inundation of crops and pasture. This system aims to predict flash floods in various parts of our country by learning from past data.

Paper I:

Video:	
Awards & Laurels:	
2.3	Cardio Climatology
Group Members: Anurag Ghatge , Piyush Waghmare, Varun Chawla , Shreya Kukreja	
Mentor: Dr. Sharmila Sengupta	
<p>Abstract: Climate change in India is one of the most alarming problems faced by our community. The first challenge dwells on how to construct reliable statistical models based on massive climate data of years and accurately capture the relationship between temperature and potential factors of cardiac disease.. Machine Learning can be used to analyze and predict the graph of change using previous data and thus design a model which in the future can furthermore be used to catalyze impactful work of climate change and take steps in the direction to analyze risks of cardiovascular diseases in different states of India.</p>	
Paper I:	
Video:	
Awards & Laurels:	
2.4	Heart Disease Prediction
Group Members: Khushi Bhatia, Shubhum Gupta, Aditya Mundas, Suraj Patel	
Mentor: Mrs. Rohini Temkar	
<p>Abstract: The motivation of our project is to save human resources in medical centers, improve accuracy of diagnosis of heart diseases. We aim to build a system which will help in detection of heart diseases with the help of machine learning algorithms as well as an app through which many healthcare workers can access the model</p>	
Paper I:	
Video:	
Awards & Laurels:	
2.5	WeCare: Depression Detection using ML

Group Members: Sakshi Patil, Shalini Mirani, Suhail Shaikh, Siyona Singh

Mentor: Mrs. Rohini Temkar

Abstract: A person's ability to perform basic tasks might be affected by a number of challenges that arise as a result of physiological interference in their lives. One such problem is depression, which needs to be identified at earliest. The main goal of our project is to assist medically qualified psychiatrists through the use of social media platform. Traditional research methods, such as surveys or clinical assessments, may have limitations in capturing real-time and large-scale data from diverse populations. However, social media platforms like Twitter provide a rich source of data that can offer insights into individuals' thoughts, emotions, and behaviors related to depression in their everyday lives. Hence, our project can help overcome some of the limitations of traditional research methods.

Paper I:

Video:

Awards & Laurels:

2.6	Detection of Distributed Denial of Service (DDoS) attack using ML and Deep Learning algorithms
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Group Members: Swapnil Thatte, Anishkumar Iyer, Mihir Bhatkar, Siya Doshi

Mentor: Dr. Dashrath Mane

Abstract: A distributed denial-of-service (DDoS) attack is a malicious attempt to disrupt the normal traffic of a targeted server, service or network by overwhelming the target or its surrounding infrastructure with a flood of Internet traffic. The aim of this project is to build a system which is able to detect DDoS attack with very high accuracy by using Machine Learning and Deep Learning Algorithms.

Paper I:

Video:

Awards & Laurels:

2.7	Melanoma Prognosis and Care
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Group Members: Priyosh Mondal, Aditi Bhatia, Roshini Panjwani, Shrey Panchamia

Mentor: Mrs. Indu Dokare

Abstract: Melanoma Prognosis and Care” aims to provide real-time information about Skin Cancers, emphasising Melanoma. Melanoma which is a type of skin cancer and the most frequent cancer in the white population worldwide. Based on the rapid prevalence of skin cancers, and the lack of efficient drug delivery systems, it is essential to surge the possible ways to prevent or cure the disease. The Melanoma Prognosis & Care project is based on image processing using CNN. Various parameters which have been considered at the time of evaluation are accuracy, precision, recall etc. The system determines the lesion images into cancerous and non-cancerous melanoma with an accuracy of 92% using CNN. The project aims to implement the image classification machine learning model using an interactive website. The website includes information regarding the types, variants and various treatments of Melanoma both in males and females. Historical knowledge and comparison in the rise of skin cancer and the techniques added to decrease its spread of it. It is an application implementing a machine learning model to detect skin cancer and its categories using powerful image processing techniques powered by AI & ML tools.

Paper I:

Video:

Awards & Laurels:

2.8 | Indian Stock Market analyser and predictor using ML

Group Members: Nikhil Haswani, Nikkita Gurnani, Hitesh Ramrakhyani, Namrata Avhad

Mentor: Mrs. Indu Dokare

Abstract: Stock market plays a pivotal role in the financial aspect of the nation's growth, but the stock market is highly volatile and complex in nature. It is affected by significant political issues, analyst calls, news articles, the company's future plans for expansions and growth, and many more. Hence, any investor would be interested in understanding the stock market over time and how the factors mentioned above affect the behaviour of the stock market. Every business day, millions of traders invest in the stock market. Most of these investors lose money and others gain. However, considering any trading day, loss or gain is absolutely inconsistent. The demand to predict stock prices is extremely high, hence the need for stock market analysis. This project is focused on analysing the stock of any given company based on statistical models using data cleaning and data visualisation. The cleaned data is then preprocessed and trained and tested to predict the future prices. The objective of this project is to minimise the risk of loss in every trade thereby maximising the profit.

Paper I:

Video:

Awards & Laurels:

2.9	InsureME: Your Personal Healthcare Companion
Group Members: Ashutosh Mishra, Nishchay Rajpal, Jatin Ochani, Sahil Nagdev	
Mentor: Mrs. Lifna C.S	
Abstract: Healthcare has become a major concern after the pandemic. So we use machine learning to compute the medical insurance cost of an adult. This project focuses on adults, mostly the working adults. We have made a web application, which asks the user's details and uses the Bagging Regressor to predict the cost. We have also planned to develop a mobile app for the same	
Paper I:	
Video:	
Awards & Laurels:	
2.10	Prediction of Road Accidents using Machine Learning
Group Members: Tanisha Patil, Meera Sawantdesai, Gautam Dinga, Sonal Belani	
Mentor: Mrs. Mannat Doultani	
Abstract: With the high number of traffic incidents and deaths these days, the ability to forecast the number of traffic accidents over a given time is important. Statistical or crash prediction models have frequently been used in road safety studies. They can be used to identify major contributing factors or establish relationships between crashes and explanatory accident variables. Speed, Weather Conditions, Road Surface conditions, Crossing Physical facilities, Light Conditions, Accident Severity, No. of casualties, and many other factors affect the safety of vehicles and vehicles' surroundings. Our project aims to study the interrelationships between road accidents between road conditions, traffic issues, and other accidental factors. Examples associated with hazardous accidents could be identified by building up a prediction model that predicts road accidents based on accidental factors. Our project aims to apply machine learning algorithms such as Decision Tree, KNN, Random Forest, Linear Regression, and Logistic Regression to detect road accidents.	
Paper I:	
Video:	
Awards & Laurels:	
3.	IoT, Robotics & Embedded Systems

3.1	Speech Emotion Recognition
Group Members: Ritika Hotwani, Vivek Balani, Prabha Pamula, Yash Pahlani	
Mentor: Prof. Mannat Doultani	
Abstract: Emotion Recognition is a trending research topic these days, with its main motive to improve human-machine interaction. As human beings, speech is the most natural way to express ourselves. We define an Emotion Recognition system as a collection of methodologies that process and classify speech signals to detect emotions embedded in them. Emotions can be determined considering various factors like speech, facial expressions, and body language. We aim to extract features from the input speech imported using a microphone of the system. The recognizer will be able to view the pitch diagram (for input speech) and a display of emotion. Such a system can find use in a wide variety of application areas like interactive voice-based-assistant or caller-agent conversation and analysis of human mental and heart health prediction and human-robot interaction.	
Paper I:	
Video:	
Awards & Laurels:	
3.2	Digital mathematics Game
Group Members: Ritika Bhat, Reshoo Nehru, Sakshi Rane, Raghav Pratap Singh	
Mentor: Prof. Pallavi Gangurde	
Abstract: The main purpose of creating this application is to improve the mathematical ability of primary students from 4 to 12 years, by introducing a new concept of learning through the combination of education and entertainment in a simple game that provides what they need. It is an Augmented Reality based mathematical game which will teach children mathematics by using 3D objects and views.	
Paper I:	
Video:	
Awards & Laurels:	
3.3	Smart Wearable for Hearing Impaired
Group Members: Shruti Dalvi, Hitakrit Goplani, Krish Mehta, Swara Nabar	

Mentor: Mr. Richard Joseph

Abstract: Partial or complete inability to hear is referred to as auditory impairment. Hearing loss can have an impact on other aspects of one's life as well. Along with loss of capacity to hear the auditory impaired are also affected mentally and emotionally. The proposed system here is designed to help the hearing impaired in daily life activities such as crossing roads, walking freely in public. The system consists of a smart wearable and an application to help hearing impaired people visualise sounds around them. The system's main benefit is that it will make it possible for those who are hearing-impaired to safely navigate on highways and help them with daily tasks, increasing their independence and self-confidence. The smart wearable will alert users regarding any sudden noises like car horns, sirens, etc so that the users can act accordingly. To achieve this we have used IoT and ML.

Paper I:

Video:

Awards & Laurels:

4. Image Processing, Virtual & Augmented Reality

4.1 Skin Cancer Recognition

Group Members: Isha Desai, Jessica Lalchandani, Trishala Jeswani, Sanjana Asrani

Mentor: Dr. Sujata Khedkar

Abstract: Skin cancer is considered as one of the most dangerous types of cancers. There is a drastic increase in the number of deaths due to lack of knowledge of its symptoms and prevention. The most serious type of cancer, Melanoma, can be efficiently treated if detected in early stages. Technology to recognize the type of skin cancer without medical intervention can assist in quick diagnosis and help in saving lives. The proposed system works on detection and classification of 7 different types of skin cancers using deep learning tools. The deep learning method used in this implementation is CNN as it has given highest accuracy in visual imaging tasks.

Paper I:

Video:

Awards & Laurels:

4.2 Smart Music Player Using Mood Detection

Group Members: Khusbhoo Kimtani, Harsha Chelani, Vidhi Chijwani, Ritesh Tahilramani

Mentor: Mrs.Pruna Solaunke

Abstract: The human face plays an important role in identifying an individual's emotional state. The project is to develop a Smart Music Player using Mood detection, which will be a website meant for users to minimise their efforts in managing and creating their playlists each time. Expressing various expressions/ emotions is something which defines an individual's mood. People also hear music to regulate their current mood. Our application will capture the facial image of a person which is further scanned, followed by the processing of the image to detect the mood of the person to display the songs to be played.

Paper I:

Video:

Awards & Laurels:

4.3	A Step Forward in revolutionizing Lung Cancer Screening
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Group Members: Vedansh Udhawani, Chirag Dodeja, Romesh Lulla, Sunny Bhatia

Mentor: Mrs. Nusrat Ansari

Abstract: Lung cancer is the uncontrolled growth of abnormal cells that starts in one or both lungs. Computer-aided diagnosis (CAD) is currently among the most effective approaches for detecting lung abnormalities. It is therefore beneficial for doctors as one more measure to be able to accurately identify cancerous cells. Developing a computer-aided diagnosis (CAD) system for lung cancer detection using a machine learning algorithm that accurately predicts whether a patient is suffering from lung cancer based on their chest CT scan image by utilizing image processing techniques that can be used to preprocess the images and extract relevant features such as texture, color, and shape, and, at the end, machine learning techniques to help them in providing proper treatment.

Paper I:

Video:

Awards & Laurels:

4.4	Breast Cancer Classification and Risk Prediction using Machine Learning
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Group Members: Yash Brid, Prem Chawla, Atharva More, Aditi Salvi

Mentor: Mrs. Nusrat Ansari

Abstract: Breast cancer is a prevalent disease affecting both men and women worldwide. Early identification is crucial for improving survival rates and reducing death rates. We propose a system for classifying different types of breast cancer and predicting the risk of developing the disease using histopathological images and machine learning algorithm. Our aim is to enhance the accuracy of breast cancer diagnosis and prediction.

Paper I:

Video:

Awards & Laurels:

4.5 | Bone Fracture Detection and Prevention

Group Members: Omkar Mahajan, Yash Kaka, Denzil Nelson, Anish Mangnani

Mentor: Prof. Sunita Suralkar

Abstract: Our project aims at creating a diagnostic as well as a training tool for medical professionals. It can serve as a software assistant or a teacher. This will be achieved by creating a web or mobile application with an intuitive user interface. It will serve as a tool to reduce medical errors that occur in bone fracture cases by acting as an extra layer in diagnosis. It will be able to highlight details in x-ray images and computerised tomography scans that may be missed by the human eye. It will also be able to be used by medical students to cross-check their practice diagnosis with this project rather than a human mentor which would save time and students will be able to practise with more images ultimately creating better medical professionals. We can also provide prevention measures like posture detection and recommendation.

Paper I:

Video:

Awards & Laurels:

4.6 | Image to text and speech conversion using machine learning

Group Members: Yash Kewlani, Soham Bhole, Atharva Mahalle

Mentor: Mr. Sanjay Mirchandani

Abstract: This project aims to develop a machine learning model that can convert images to text and speech. The process involves image pre-processing, text extraction using optical character recognition, and speech synthesis using text-to-speech technology. The resulting system can have practical applications such as assisting visually impaired individuals or providing automated captions for video content.

Paper I:	
Video:	
Awards & Laurels:	
5.	Networking, Security & Blockchain
5.1	Chainify
Group Members: Tarun Shetty, Om Borate, Sujal Patil, Divesh Mangtani	
Mentor: Dr Mrs Nupur Giri	
Abstract: Using Hyperledger fabric a private block chain , chainify will handle the problem of buying and selling of land by providing the advantage of private blockchain	
Paper I:	
Video:	
Awards & Laurels:	
5.2	Chainbank : Banking without banks
Group Members: Varad Deshmukh,Hrishikesh Patil, Dhananjay Pai, Tarang Rajpal	
Mentor: Mrs. Sharmila Sengupta	
Abstract: The ChainBank is a semi decentralised banking system(web-app) designed for students, wherein they can invest their money in exchange of tokens.They can withdraw any amount they require, whenever from the pool of funds at zero interest rate.This project mainly targets the regular students who fall short of money out of their irregular financial habits or economic issues.This project not only helps them financially when in need but also makes them financially literate and managing money wisely.Anonymity is also taken care of certainly .	
Paper I:	
Video:	
Awards & Laurels:	

5.3	"VERIFICATE" Leveraging blockchain for Certificate Verification
Group Members: Tanmay Thakare, Tanay Phatak, Gautam Wadhvani, Teesha Karotra	
Mentor: Mrs. Priya RL	
Abstract: People bluff on their resumes to land a job or gain admission to universities. Multinational firms invest a ton of money in looking into the backgrounds of job seekers. However, these companies' background check processes are exceedingly costly, time-consuming, and inefficient. We suggest a method to provide a secure mechanism for reliable authentication of university certificates to tackle this issue.	
Paper I:	
Video:	
Awards & Laurels:	
5.4	Secure E voting system using blockchain
Group Members: Muskan Bahrani, Meet Chhabria, Kaustubh Kharche, Sakshi Shinde	
Mentor: Mrs.Pallavi Gangurde	
Abstract: In the proposed model, we use the concepts of personal and public blockchain. The personal blockchain is used for the purposes of voter registration and voting. The public blockchain is used to maintain the integrity of the personal data of the voters by storing the root hash derived from the Merkle hash tree and revealing the results of the voting stations as soon as the voting process is completed. The proposed blockchain-based e-voting system offers transparency, treasury, confidence and prevents intrusion into the information exchange network.	
Paper I:	
Video:	
Awards & Laurels:	
5.5	Giggle Gauge: CNN based approach to rate humour quotient in standup comedy
Group Members: Mansi Bellani, Sudhanshu Sabale, Harsh Rane, Aayush Talreja	
Mentor: Mrs. Sunita Sahu	
Abstract: Humour is an important aspect of human civilization as it governs our daily lives. Teaching	

a computer to generate humour paves the way for various diverse practical applications. Recommendation engines currently available on platforms go to the extent of identifying the relevant contents that are available however we go a step ahead and teach machines to detect and allocate a humour quotient. In this paper we are proposing a model to detect and rate the humour quotient in Stand-up comedy. The model can be even used for any event that generates humour and needs to be evaluated for its effect on the target audience. We have created a multi-modal humour annotated dataset using stand-up comedy clips and devised a novel scoring mechanism to annotate the training data with a humour quotient score using the audience's laughter.

Paper I:

Video:

Awards & Laurels:

5.6	Decentralised Music Streaming Platform Using Blockchain
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Group Members: Pushkaraj Baradkar, Samarth Gawali, Om Gole, Yash Sahane

Mentor: Mrs. Yugchhaya

Abstract: The music industry has experienced a lot of innovation in terms of music production, distribution and music admirers. Many organizations which are acting as middle men; gobble up a significant share of the profit generated from the artists. The major problem to be resolved is the revenue distribution policies that exploit the artists at large. This paper describes the involvement of blockchain technology and tokens, in turn building a decentralized application(dApp). The primary goal is to maximize the share allocation to the artists from the revenue generated and provide the users with a free-to-use interactive platform.

Paper I:

Video:

Awards & Laurels:

6.	Cloud Computing & High Performance Computing
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6.1	ML model to study health effects of environmental factors
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Group Members: Dimple Madhwani, Jayesh Dayalani, Gaurav Ambartani, Aaditya Khetwani

Mentor: Mrs. Sunita Suralkar

Abstract: The aim of our project is to create a Machine Learning model which will help us analyze the effects of environmental factors on health and mortality. Our ML model would classify the input data based on factors like pollution, sea level etc. as well as anthropogenic factors and help us understand what's the major factor that is affecting our health.

Paper I:

Video:

Awards & Laurels:

6.2 | Sentiment Analysis of OYO Hotel Reviews

Group Members: Tanisq Harchandani, Komal Chhutlani, Vansh Takrani , Aryan Motwani

Mentor: Mrs. Sunita Sahu

Abstract: Sentimental analysis or opinion mining is the computational study of people's opinion, sentiments , attitudes and emotions expressed in written language. It is one of the most active research areas in natural language processing and text mining in recent years. Its popularity is mainly due to two reasons. First ,it has a wide range of applications. Second, it presents many challenging research problems.

Paper I:

Video:

Awards & Laurels:

7. | **Application Design & Product Development**

7.1 | Digital Vikreta : A platform for local stores

Group Members: Pranav Ubarhande, Harsh Loya, Viraj Joshi, Harsh Patil

Mentor: Dr. Mrs. Gresha Bhatia

Abstract: Electronic Commerce is the process of doing business through computer networks. A person sitting on his chair in front of a computer can access all the facilities of the Internet to buy or sell the products. Unlike traditional commerce that is carried out physically with effort of a person to go & get products, ecommerce has made it easier for human to reduce physical work and to save time. From last decade, the local market has been disrupted by web giants such as amazon and flipkart. This project will be a novel approach to solve this problem for local vendors and make them increase their sales and survive in this world of online shopping. From last decade, the local market has been disrupted by web giants such as amazon and flipkart. This project will be a

novel approach to solve this problem for local vendors and make them increase their sales and survive in this world of online shopping.

Paper I:

Video:

Awards & Laurels:

7.2 | Sahayata: A Gender Friendly E-learning Platform

Group Members: Aarya Lotke, Aayushi Salunkhe, Bhargav Mungekar, Niranjana Yeole

Mentor: Dr. Mrs. Sharmila Sengupta

Abstract: We are targeting the Transgender community, their employment and education, with an aim to provide an information and support platform for them. We are providing an online platform that could cater to the needs of transgender community. The e-learning will offer resourceful courses that will help to leverage their skills in various fields professionally.

Paper I:

Video:

Awards & Laurels:

7.3 | 360 degree performance analysis

Group Members: Jasmine Dhirwani, Tithi Jhamnani, Sakshi Bhojwani, Nishtha Batra

Mentor: Dr. Mr. Prashant Kanade

Abstract:

In today's digital world, from office clerks to the CEO of companies, everyone uses the web for social or technical platforms. The work when digitised becomes easy to view, edit and less time consuming. The work in educational universities requires a lot of manual labour and paperwork. One of the most important aspects of educational universities is the performance analysis. The teachers need to analyze the performance and inform the parents about their child's performance. So the 360 student performance system will be a digitized version of the performance cards of students, which will require less time and will be more efficient and precise. The parents login will help the parents to check the performance of their child through this system whenever they want. It will not only make the work easier but also decrease manual labor and paperwork.

Paper I:

Video:

Awards & Laurels:

7.4 | Career Buddy System

Group Members: Divya makhija, Mohit Gangwani , Rahul Fatnani, Roshni Jaisinghani

Mentor: Dr. Prashant Kanade

Abstract: Nowadays most of the students face problems in choosing the right career. The choice of career is one of the most crucial decisions. We have designed an Online Career Buddy System targeting students' career and future. The main aim is to make a website that helps users not only to make better choice of their career using our best given suggestion for their better future that helps students to choose the right career and to make a better choice of their career by giving various tests and by going through all the information regarding the streams .We have added different test levels which will help student be more clear about the stream he chooses .We have also added the best colleges according to the streams .We will provide the blog section in which user can view different blogs which helps student to get more information regarding various opportunities.

Paper I:

Video:

Awards & Laurels:

7.5 | e-Pradaan: A connectivity between donor and receiver

Group Members: Diya Janyani, Ritika Vanjarani, Sagar Kishnani, Sahil Kishnani

Mentor: Dr. Prashant Kanade

Abstract: Our application revolves around helping the needy by connecting NGOs and common people. The donors shall be able to see a plurality of options by which they can donate and thus a network is established between donors, people who aid the donors in donating (NGOs) and the actual needy people to whom the donated item is sent.

Paper I:

Video:

Awards & Laurels:

7.6	
Group Members:	
Mentor:	
Abstract:	
Paper I:	
Video:	
Awards & Laurels:	
7.7	Gym Management System
Group Members: kapil Bhavnani, Jayesh Repale , Lavesh lulla , chetan bajaj	
Mentor: Mrs. Sujata Khandaskar	
Abstract: In these modern days people have become so concerned about their health and diet; it is but obviously they seek out a gym. Gym is equipped with all the modern machinery and other supportive items to provide a better service to its customers. So the numbers of members are tending to increase day by day and Gym Management has decided to go for an IT solution in order to handle the increased volumes. The system is supposed to provide easy access to the resources of the gym to its members while empowering the management process of the gym. Following major functionalities such as member management, attendance management, charges management, maintenance management and reports generation were identified.	
Paper I:	
Video:	
Awards & Laurels:	
7.8	House Price Prediction System
Group Members: Vinit Patil, Chiraj Panjwani, Deanna Fernandes, Prerna Bajaj	
Mentor: Mrs. Sujata Khandaskar	
Abstract: Accurate property price forecasting is essential for a variety of stakeholders, including	

house buyers and sellers. The real estate sector is a significant one of the worldwide economy. This work, which aims to create a machine learning model for precisely forecasting housing values, is presented in this publication.

Paper I:

Video:

Awards & Laurels:

7.9 | Inclusive education for diverse learning

Group Members: Gunjan Chhaproo, Sahil Dodeja, Vanshika Makhijani, Neeta Narang

Mentor: Mrs. Sunita Sahu

Abstract: The system aims to provide quality education for underprivileged students who can't afford hefty fees for their education. The proposed system facilitates access of good teachers who willingly participate in providing online/offline lectures according to their convenience. The system also provides the facility of quizzes along with study material for exams which was previously unavailable to them. there is facility of Intimation for rescheduling/cancelling lectures for teachers and also post blogs .Students are being reminded for the registered lectures one day prior to the lecture.

Paper I:

Video:

Awards & Laurels:

7.10 | PocketGuide

Group Members: Karina Karira, Simran Lahrani, Gayatri Talreja, Roshni Wadhvani

Mentor: Mrs.Pallavi Saindane

Abstract: The main aim of this project is to guide any individual visiting our college VESIT. It will basically provide information about the labs and classrooms through QR scanner in the form of text and audio if required. The user can also provide suggestions if needed. Our application supports multiple languages in audio.The user can also view his current location.

Paper I:

Video:

Awards & Laurels:

7.11 | Jan-Seva-Bot

Group Members: Aayush Shribatho , Sahil Salunkhe , Abhayvir Singh**Mentor:** Mrs.Pallavi Saindane

Abstract: The objective of “Jan-Seva-Bot” is to simulate Government schemes/rules. Major problem that India faces is that accurate and true information regarding Government schemes and laws doesn’t reach to the ground level of the country due to various reasons. For this reason, we will be designing a chatbot which will help in clearing the doubts related to the Government schemes of India and accurate information regarding them. The common citizens of India will greatly benefit through this chatbot as the queries can be asked in regional languages. A text to speech feature will be available for citizens of India who are not well versed with typing. Due to miscommunication between the government and the citizens many conflicts & riots can take place and can have adverse effects on the economy and well being of this country, here the chatbot can act as a solution to this problem. This can be done by stimulating conversation with a user and responding to any question asked about the scheme. Thus accurate information about various government schemes can be reflected to the grass root level of rural as well as urban part of India & hence every citizen of this country will have accurate information about government schemes at their fingertips. A chatbot is a computer program which controls a conversation through voice or textual methods. These programs are often structured to firmly copy how a human would behave like a conversational partner and thus pass the Turing test. The use of chatbots is very common nowadays in sectors like Marketing, Supporting Systems, Education, Health Care, Cultural Heritage, and Entertainment.

Paper I:**Video:****Awards & Laurels:**

7.12 | RestroConnect

Group Members: Harsh Bakhtar, Divyang Patel, Eshwar Vazirani, Mithil Wasrani**Mentor:** Prof Veena Trivedi

Abstract: This RestroConnect is an app designed to address numerous issues that Users encounter when dining. It is a technology that enables Users to place orders without the assistance of a waiter (only for ordering). At rush hours, it mostly provides customer management. There are two distinct applications in the RestroConnect software (for the customer as well as the admin). giving the administrator choices for managing tables, menus, and customer verification. Along with the menu, the User app will also feature an ordering option. In conclusion, customers can also make payments using any online or offline methods and offer feedback. User statistics are sent to the admin through the RestroConnect admin side application, which can often aid in growing business.

Paper I:
Video:
Awards & Laurels:

	SE MINI PROJECT
1	AI, Deep Learning and Data Warehousing and Mining
1.1	Real Time Transcribing
Goal	9 : Industry Innovation and Infrastructure
Group Members : Aditya Mangtani,Dhruva chaudhary, Ishita Marathe,Hiten Kataria	
Mentor : Dr. Sujata Khedkar	
<p>Abstract: There is a growing demand for closed captions and subtitles in video content. A recent survey found that 85% of Facebook video is watched without sound, highlighting the importance of providing captions for video content. Additionally a study shows that 80% of individuals who use captions are not deaf but rather are using captions for convenience or to improve their understanding of the content.</p> <p>The real-time video transcribing and subtitling project aims to generate captions for video content in real-time using speech recognition technology .The system will also have the capability to handle multiple languages and dialects, allowing it to be used in a variety of different regions and countries. It is aimed at making video content more accessible for deaf and hard of hearing individuals, as well as for people in noisy environments.</p> <p>The system can handle multiple languages and will also generate closed captions for later viewing. In addition to that the project will also have the ability to generate transcription of video in text file which can be used for later viewing The goal is to improve accessibility and convenience for all individuals who watch video content.</p>	
Video:	
1.2	ICT to enhance quality of Life on Land
Goal	15: Life on Land
Group Members: Vedant.R.Talwalkar,Aditya Kushwaha,Lintomon Chirakkara, Chinmay Phapale	
Mentor: Dr. Prashant Kanade	
<p>Abstract: Throughout history and into modern times,humans have purposely cleared land to make space for agriculture,industries,and grazing domestic animals.</p> <p>Currently, a high amount of deforestation is occurring in tropical forests,to improve infrastructures such as buildings,roads,etc.</p> <p>Farming is a big contributor of deforestation. Farmers clean large areas of land by burning them,allowing the ash to fertilize the land for crops. However, the land is only fertile for a few years,after which the farmers move on to repeat the process elsewhere, this reduces the green cover on earth. Hence,in order to bring back this diminishing greenery, we are aiming to design a software to connect the ones who want to help improve the natural condition of forests in financial aspects as well as in providing physical help.</p>	

We intend to bridge the gap between the persons who can donate their money and the ones who can provide their time to plant trees like schools ,NGOs etc. Once the donors donate money for this cause, they can stay assured of the plantation process as the system will also provide regular updates on the status of plants. This platform will also motivate the schools and related organizations to take up more such projects so that the ultimate goal of restoring nature can be achieved.

Video:

1.3	NetoMining- Using netnographic analysis and Text mining for Understanding consumer perceptions of Electronics commerce companies
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Goal	4: Quality Education
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Group Members: Prasad Chaudhari ,Aman Sande ,Omkar Kumbhar

Mentor: Dr. Dashrath Mane

Abstract: Sentiment analysis of e-commerce reviews is the hot topic in e-commerce product quality management, from which manufacturers are able to learn the public sentiment about products being sold on e-commerce websites. Meanwhile, customers can know other people's attitudes about the same products.

There is a lot of confusion in consumers before buying any product on various E-commerce websites. To make the consumer's experience better ,this project helps them by providing suggestions of best platforms for various products by providing personalized and high quality service. In this project data of customers' reviews will be collected and then with the help of netnography and text mining the data will be analyzed.

Our method was evaluated against real user data collected from an online website. Hybrid Recommendations is one of the important modules of the system which helps overcome the drawbacks of the traditional Collaborative and Content Based Recommendations. It gives better performance than existing methods. The proposed system helps the people to find out correct review of the product.

Video:

1.4	NGO network: connecting for better future
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Goal	17: Partnerships for the goals
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Group Members: Anurag Shirsekar, Sai Thikekar, Uzair Shaikh, Yash Chhaproo

Mentor: Mrs. Geocey Shejy

Abstract: The NGO Network Connecting for a Better Future project is a website aimed at creating a platform for NGOs to collaborate and share resources to achieve their common goals. The website will serve as a hub for NGOs to find partners, exchange ideas, and coordinate efforts towards creating a better future for society. The website will provide a user-friendly interface for NGOs to register, create profiles, and browse the profiles of other NGOs.Through this project, NGOs will be able to build stronger connections and work together towards a brighter future.

Video:	
1.5	Detecting SARS-CoV-2 Using Deep Learning
Goal	3: Good Health And Well-Being
Group Members: ANURAG TRIPATHI, Bhavesh Ajwani, Param Pandey, Pratham Shetty	
Mentor: Mrs.Nusrat Ansari	
<p>Abstract: Coronavirus disease (COVID-19) is an infectious disease caused by the SARS-CoV-2 virus. Anyone can get sick with COVID-19 and become seriously ill or die at any age. The best way to prevent and slow down transmission is to be well informed about the disease and how the virus spreads. The virus can spread from an infected person's mouth or nose in small liquid particles when they cough, sneeze, speak, sing or breathe. So to check if the subject is infected by covid-19 or not we have built a website from which they can detect their covid-19 cases using just their Chest CT images (using Deep Learning).Our website predicts desired results with maximum accuracy.</p>	
1.6	Plant identification using AI for kids
Goal	3:Good Health And Well-Being
Group Members: Akash Fatnani,Nikhil Teckchandani,Devyaansh Razdan,Kunal Vishwakarma	
Mentor: Mrs.Nusrat Ansari	
<p>Abstract: The plant identification project for kids is an educational initiative designed to introduce children to the world of plants and develop their knowledge and understanding of the plant kingdom. The project involves teaching children about plant anatomy, growth habits, and the importance of plants in our daily lives. Using fun and interactive activities, children will learn how to identify different types of plants and distinguish them based on their unique features such as leaves, flowers, and fruits. Through this project, children will develop a sense of appreciation and respect for plants, and gain a deeper understanding of their role in our ecosystem.</p>	
Video:	
1.7	Car Inventory Store
Goal	11 Sustainable cities and Communities
Group Members:Aanchal Dayaramani, Harshita Jawaharmalani,Hemanshu Murpani	
Mentor: Mrs.Priti Joshi	

Abstract: Development of an interactive car sale system which lets a customer find a car and its details is the main objective of this project. Both the user and the administrators can enter the details of every car. Administrators are responsible for maintaining the details of vehicles like the Manufacturer information, Year, Model, Price, and Kilometers traveled. The system's main functions include:

- Signing in and log in functionality.
- Customers can look up various cars listings with details included.
- Users may select and add products to the shopping cart..

The system provides a search algorithm which enables the user to find a car with all details displayed matching the car model. Users can also view the information of vehicles purchased and their particulars. Menu's and toolbars are part of the excellent user interface implemented in the project

Video:

1.8 Web Based Student performance analysis

Goal : 4. Quality Education

Group Members: Sonnal Katara, Chiraag Chugh , Dhara Bhatia , Neha Lotwani

Mentor: Mrs. Priti Joshi

Abstract: Almost every university has their own management system to manage the students' records. Even though there is a student management system that manages the students' records, no permission is provided for others to access due to its privacy settings. Thus, this project proposes a system named Web-based student Performance Analysis to keep track of students' results. The proposed system analyzes the students' study related data, to extract all possible knowledge from students, teachers and admin. Basically, this system can help to maintain and manage the records of students, teachers, events of college, projects, attendance and more. In addition to the study related attributes including the homework and study hours as well as the previous achievements and grades. The proposal aims to analyze the students' study related data details in terms to figure whether the student is on the right track or struggling or even failing.

Video:

1.9 Smart Health Consulting System

Goal 3: Good Health and Well Being

Group Members: Kevin Patel, M.Kaif Qureshi, Krishnam Raja

Mentor: Mrs. Priyanka Shah

Abstract: This mini project aims to develop a Smart Health consulting system, a web application designed to provide users with expert guidance on health-related issues from qualified and renowned doctors. The system is built on a desktop application platform and aims to address the growing need for accessible and convenient health consultancy services. By leveraging technology and expert knowledge, this system seeks to improve health outcomes by enabling users to make informed decisions about their health.

Video:

2	<u>BIG DATA ANALYTICS AND MACHINE LEARNING</u>
2.1	Practice Self-Care
Goal	3: Good Health and Well Being
Group Members: Shreya Nalawade, Gayatri Vaidya, Praful Pradhan, Vaishnavi Chavan	
Mentor: Mrs. Abha Tewari	
<p>Abstract: Self-care means taking the time to do things that help you live well and improve both your physical health and mental health. When it comes to your mental health, self-care can help you manage stress, lower your risk of illness, and increase your energy. In today's era, health has become the utmost priority of every human being. So we came with an idea as to how we can keep track of our diet habits. This mini project is based on practicing self care. Our app 'CURIS' is based on Android Studio helps users to maintain a track for diet and fitness. Also it involves features such as BMI calculator and To-do-list. The app certainly helps the users to have a look upon the physical habits as well as psychological habits such as maintaining a to-do-list which will help to perform the tasks on time.</p>	
Video:	
2.2	Knowledge sharing- Join second hand whenever you can
Goal	17: Partnership for the Goals
Group Members: Bhagyashree Vaswani, Shamal Dhekale, Chandni Gangwani	
Mentor: Mrs. Abha Tewari	
<p>Abstract: Online shopping has got a special place in our hearts and daily routine especially due to Covid-19 pandemic. Web-stores are available for every item for convenience. So, why not a web-store that provides a door-to-door service in buying as well as selling second hand books for a reasonable price without a need to exclusively go out and bargain. Buying books from thrift stores that won't usually be in pristine condition for a higher price does not sound like a budget friendly and time efficient idea. Also, selling books by not getting the worth of your product is a capital loss. Thus, a seller and buyer friendly website is a solution to all those casualties where digital is a new default.</p>	
<p>Learning needs books which offer something more tangible and provide a concentrated singular line of thoughts. The website can help one achieve the same by maximum profits and credibility. It will initially give you bonus rewards just for logging in and if you are a seller, it will give reward points for selling books as per the amount he writes. Further, one can buy another book by collecting more rewards and sell it again and the cycle goes on. The cycle provides the perks of reading more and exploring even more with the simple objective of knowledge sharing.</p>	
Video:	

2.3	Lung Disease Classification using SVM and LR
Goal	3: Good Health and Well Being
Group Members: Simran Ahuja, Jesica Bijju, Sejal Datir, Sania Khan	
Mentor: Mrs. Nusrat Ansari	
<p>Abstract: The classification of lung diseases on the basis of medical images and audios has been supported by the recent developments of machine learning. Hence, numerous work on the detection of lung disease using machine learning can be found in previous studies. This paper presents a survey of machine learning for lung disease detection in medical images. The advantage of AI is they can automatically learn, extract and translate the features from data sets such as images, text or video, without introducing traditional hand-coded code or rules. This study focuses on recognizing and classifying lung diseases by ML algorithms. It includes lung disease images (i.e X-ray scan images) including bacterial pneumonia, coronavirus disease, tuberculosis and viral pneumonia. The input image is analyzed, categorized and classified using ML algorithms such as SVM and logistic regression. Classifying respiratory diseases by taking a look at the drawn curves of the respiratory impedance or derived parameters is a difficult job for untrained physicians. This study will thus allow them in classification of lung diseases without needing the experience and ability of a trained physician.</p>	
Video:	
2.4	Profit Prediction using Machine Learning
Goal	8: Decent Work and Economic Growth
Group Members: Aditya Gaikwad, Tejas Ghodke, Atharva Jadhav, Malhar Pande	
Mentor: Mr. Sanjay Mirchandani	
<p>Abstract: To help businesses in a profit-friendly decision making process, a framework to predict profit is used. This framework is an end-to-end machine learning model which processes the existing dataset, compares the result with help of machine learning algorithms and gives the best-predicted value of economic profit. The variables affecting the profit margin to be predicted (such as R&D spend, Administration, Marketing Spend) are determined and then with the use of algorithms like linear regression and multiple regression relationship between the independent variables and dependent variable is established. The regression line formed is then used to predict the value of the dependent variable. Ultimately, this model provides useful insights about strategic and sustainable development perspectives to businesses.</p>	
Video:	
2.5	Text Emotions Detection with Machine Learning
Goal	4: Quality Education

Group Members: Vishakha Singh, Anushka Shirode, Manasi Sharma	
Mentor: Mr. Sanjay Mirchandani	
<p>Abstract: In today's technological world, a majority of users across the world have access to the Internet for communication via text, image, audio and video. People from diverse backgrounds exchange information on current scenarios and project their own views on them over social media. There is a need to understand and recognize the behavior of such large text information on people by analysing their emotions. The project focuses on data obtained from text and getting emotions from them. The data required is converted into a vector of emotions and it is used to determine labels identifying one of the basic emotion families. At the end, a comparative study of the performance of different emotions is done.</p>	
Video:	
3	PRODUCT DESIGN AND DEVELOPMENT
3.1	Parichay Maharashtra-An App To Discover Maharashtra
Goal	8:Decent Work And Economic Growth
Group Members: Taufique Ansari,Kinjala Ahuja,Devangana Barua,Dipanshu Ghime	
Mentor: Mrs. Sharmila Sengupta	
<p>Abstract: 'Parichay - Mahan Rashtra an app to discover Maharashtra' is a Maharashtra Tourism mobile application to help tourists discover and explore various unknown and unheard beautiful and culturally significant places in Maharashtra in addition to the more well-known places. Furthermore the application also serves as a guide to Maharashtra's rich culture, history and tradition. The application focuses on increasing the tourist engagement at the less popular yet magnificent travel destination in Maharashtra and thus helping Maharashtra showcase its true beauty to the travelers out there.</p>	
Video:	
3.2	STUDENTS GRIEVANCE SUPPORT SYSTEM
Goal	16: Peace, justice and strong institutions
Group Members: Jiya Gangwani, Soham Panjabi, Hitesh Punjabi, Varsha Chhabria	
Mentor: Dr. Rohini Temkar	
<p>Abstract: A grievance is basically a dissatisfaction faced by students from the institute regarding any of the services. In such conditions, it is possible a student might not get the proper support, or fail to get the proper platform to state their problems. Student Grievance System helps the student to come up with their grievances and this platform binds the gap of communication between the students and the Grievance Team. This platform helps the student to address their problems further the grievance Team will forward it to the Institute or the Department supporting that matter. Eventually, the action will be taken and the status will be</p>	

updated which can be viewed by the students. This platform brings transparency between students and the Institute.

Video:

3.3 Smart Management of Food Storage and Waste Reduction.

Goal 2: Zero Hunger

Group Members: Mohit Patil, Dhruv Aswani, Mahendra Girase, Aryan Manghi

Mentor: Dr. Rohini Temkar

Abstract: In today's times we see that people don't value the food that they get. On one side there are underprivileged children who don't even get one proper meal and on the other side we observe a lot of food getting wasted in restaurants, parties, weddings, etc. Thus in order to fill this gap, our team came up with the idea of making a digital platform that would help in preventing the wastage of food and hence would be helpful in smart management of food which would also ensure that no person faces starvation and hunger related problems.

Video:

3.4 Alumni Tracking System

Goal Quality Education

Group Members: Syed Ilham, Rishi Kokil, Pavan Thakur, Amit Murkalmath

Mentor: Dr. Rohini Temkar

Abstract: Alumni Tracking System is an online-based application which will help to track college graduates. The project aims to improve the current tracking procedure of college. The purpose of this system is to provide an optimized solution for collecting, managing the alumni data and to keep updated alumni with the ongoing college events and fests. The system will be a place where we enable the communication between the alumni, the institution and the students. The main aim of the system is to overcome the drawbacks in the existing traditional system. Also, to reduce the gap between the knowledge and skills possessed by the graduates and the required qualifications needed by industries.

Video:

3.5	Employee Tracking Android Application
Goal	4. Quality Education
Group Members: Ruchir Jain, Vishakha Mangtani, Ketan Paryani	
Mentor: Dr. Dashrath Mane	
<p>Abstract: Employee management system is an application based system, having two applications developed. one for employers to manage employee details and another for employees to mark their attendance. Every organization whether government or private uses an information system to store data of their staff.</p>	
Video:	
3.6	Indian Language Rhyme Portal
Goal	4. Quality Education
Group Members: Kavish Punjabi, Aryan Hinduja, Harsh Chandiramani, Karan Nagpal	
Mentor: Mrs. Geocey Shejy	
<p>Abstract: Rhymes are an essential part of our culture. The rhyme portal helps the children to develop speech and reading abilities. Rhyme is an important way for conveyance of culture and traditions. The GUI of the portal will be intuitive and helpful for them. This project will focus on a different method to teach pre-reading skills to students. Using rhymes as a tool for teaching pre- reading skills to students is an avenue to explore while addressing the different challenges a teacher faces. Nursery Rhymes as part of the curriculum will address most of these areas and can also be fun for the students.</p>	
Video:	
3.7	Forts conservation a big challenge
Goal	11 Sustainable cities and communities
Group Members: Arya Banavali , Purtee Mahajan, Sairaj Deshpande, Ajay Gangwani	
Mentor: Mrs.Vidya Zope	
<p>Abstract: Forts are the only medium through which today's generation can connect to our rich history, the great achievements of our ancestors, the blood fights, and the soldier spirit. Fort conservation has become a major challenge in Maharashtra. So to make a step towards the conservation of forts we are here by bringing this conservation project where the visitors will be able to upload pictures of the damaged part of the forts and necessary actions can be taken.</p>	
Video:	

3.8	Shopkaro.io - Ecommerce APP
Goal	Industry Innovation and Infrastructure
Group Members: Pratik Wagharalkar, Shrinivas Ghumare, Jeet Dalal , Uday Harisinghani	
Mentor: Mrs. Vidya Zope	
<p>Abstract: Nowadays the lifestyle of the people is different. People feel uncomfortable and time consuming when going to crowded markets. So, E-Shopping is a boon as it saves a lot of time. Online shopping is a process whereby consumers directly buy goods, services etc. from a seller without an intermediary service over the Internet. Shoppers can visit web stores from the comfort of their house and shop as by sitting in front of the computer. Online stores are usually available 24 hours a day and many consumers have internet access both at work and at home. So it is very convenient for them to shop Online. Web applications have to gain the trust of the user so the user can visit that app again for new shopping. Applications must have a user friendly interface so that they can attract new customers and provide better service.</p>	
Video:	
3.9	Waste/extra food Management
Goal	2: Zero Hunger
Group Members:Anchal Sharma, Dhiren Sidhwani, Sachin Kundal, Meet Kewalramani	
Mentor: Mrs. Indu Dokare	
<p>Abstract: Food waste is an ecological, economic and social problem of the overall food produced. This raises the question as to whether food wastage could be reduced along food supply chains. Food providers in gastronomy, catering and hospitality have recently come under increasing scrutiny over their food management practices, and specifically food waste, with evidence that considerable amounts of food are thrown away during preparation, or because they cannot be stored and reused. This is the problem we intend to solve, Our website will be connecting link between the people with excess food and the people with no food.</p>	
Video:	
3.10	Website for Competitive Exams
Goal	4 Quality Education
Group Members: Aman Kumar, Ayush Balwani, Harsh Tuli, Priyanshu Gurwani	
Mentor: Mrs. Indu Dokare	

Abstract: Examinations are conducted to evaluate a person of his knowledge or ability. There are different types of examinations like qualifying or competitive exams. This information is available in an unstructured way, available in few languages which increases ambiguity, leading to misguidance. Students are often confused about which field they should pursue; this is happening because of lack of guidance towards their career. After looking towards this major problem, we will be introducing our website manzil.com

Video:

3.11 WEB APP FOR RESEARCHERS

Goal 4. QUALITY EDUCATION

Group Members: Anagha Kulkarni, Chengalva Sai Harikha, Preethika Shetty , Sneha Tanna

Mentor: Mrs. Priya R.L

Abstract: Today, one need not physically visit a library and take down notes on sheaves of paper. Various online tools and software applications (apps) have made our lives easier, especially the many helpful apps for researchers. The use of apps to ease the workload, manage time, or spark creativity is rapidly becoming de rigueur in all areas of work. In academia too, several apps for researchers are designed to help with daily activities, such as collecting and organizing resources, managing collaborative projects, maintaining daily and longer-term schedules, searching for and reading articles, and staying updated on multidisciplinary topics related to a study domain. But it has been observed that there is no single app/website which provides a helping aid for researchers.

The system aims to design a web application for researchers, where users can view their publications citations, which includes scientific journals, books, and conference proceedings. This app contains features to track, validate and visualize an individual research work as well.

Video:

3.12 Effective Education for Transgender Community(Samseva - A system to promote inclusivity)

Goal 5: Gender Equality

Group Members: Rashika Chandwani, Netal Bhansali, Yashneil Ballani, Neha Sewani

Mentor: Mrs. Priya R.L

Abstract: In this project, we are targeting the Transgender community, their mental health, employment and education, with an aim to provide an information and support platform for them. We are providing an online platform that could cater to the needs of transgender community. In remote areas transgenders struggle to get the right information, which is why launching a helpline service will provide the users the required help and services. The helpline will offer direct emotional and financial support to trans people in crisis - for the trans community, by the trans community.

Video:

3.13	Intelligent Scholarship Portal
Goal	4: Quality Education
Group Members: Richita Karira, Manav Keswani, Tanmay Chaudhary, Soumil Chaudhary	
Mentor: Mrs. Lifna CS	
<p>Abstract: As we all are heading towards the Digital India Initiative, education has now become one of the most fundamental needs and rights of every person. But due to financial obstacles most of the people are deprived of education. The Government of India provides various services to the citizens. National Scholarship Portal is one among them, which focus on ensuring quick process in providing government scholarships to needy students. The objective of this project is to propose an Intelligent Scholarship Disbursement Module into the Portal, which incorporates both Government and Private Scholarship Organizations under a single platform. The proposed module automates the entire Scholarship Process using the Aadhaar number by which the student registers with the Portal. The revamped Portal aims to relieve students from the financial insecurity which they experience during their studies and focus on studies.</p>	
Video:	
3.14	E-Health Services
Goal	3: Good health and well being
Group Members: Anmol Gyanmote, Shreya Hadkar, Manali Patil, Pranav Rane	
Mentor: Mrs. Lifna CS	
<p>Abstract: In today's world, the need for an hour is to have proper medical services to be fit and healthy. An appropriate application with E-Health Services available at a click is helpful for all generations of the world. In this project, we are developing an application where we can locate the nearest Hospitals, pharmacies, Labs, and Blood Banks that would be helpful for the people. We could just locate the hospital nearby, buy medicines quickly, and even book appointments which makes the process of getting medical aid quicker and in an easy way. The application is very effective to save lives in an emergency and recommends you to the doctors according to your need</p>	
Video:	
3.15	Data Structure Algo Visualization
Goal	4: Quality Education
Group Members: Soham Tawade, Vedant Pawar, Vedant Tawade, Nikhil Singh	
Mentor: Mrs Mannat Doultani	

Abstract: Data structure plays an important role in enhancing the performance of a program because the main function of the program is to store and retrieve the user's data as fast as possible. And it serves as an important tool in the tool kit of a programmer . This creates a need to understand it thoroughly . Although several resources are available to learn about data structures , a pictorial visualization through animation would provide a better understanding to the students. Therefore to solve this problem we decided to make a website with data structures and their functioning shown through animation . We even have enhanced our user interface so that it's easier for even beginners of Computer Science.

Video:

3.16 Department Library Portal

Goal Industry, Innovation and Infrastructure

Group Members: Madhura Gaval, Vanshika Lalwani, Pratham Nathani

Mentor: Mrs Mannat Doultani

Abstract: Department Library Portal is a system which maintains the information about the books present in the library, their authors, the members of library to whom books are issued, library staff and all. This is very difficult to organize manually. Maintenance of all this information manually is a very complex task. Owing to the advancement of technology, organization of an Online Library becomes much simple. This Library Portal has been designed to computerize and automate the operations performed over the information about the members, book issues and returns and all other operations. This computerization of library helps in many instances of its maintenance. It reduces the workload of management as most of the manual work done is reduced.

Video:

3.17 KidoLearn : An Educational Gaming Website for kids

Goal 4: Quality Education

Group Members: Tasmiya Khan(D7A-32) , Dinky Khatri(D7A-33), Ketaki Nalawade(D7A-45), Srushti Sambare(D7A-50)

Mentor: Ms. Pallavi Gangurde

Abstract: In the world of digital networks and technology, the evolution of education has also progressed. The early education of a child often consists of shapes, simulation games, and fun learning. It starts at kids' homes with their parents' guidance. A lot of research shows how much the preschoolers are fond of games, interactive simulations, cartoon characters and a lot more on the mobile phone. Also, Some Parents find it difficult to understand the English Language.

Since "EARLY CHILDHOOD EDUCATION IS AN IMPORTANT CRITERIA" we are here representing our application which is about "LEARNING WITH FUN". With regard to the literature review, we present the latest findings related to the real educational values. Our analysis says that while there are thousands of

applications available today, choosing the most appropriate educational ones for children is difficult and problematic for both teachers, educators as well as parents.

KidoLearn is an educational gaming application which will help the child identify things along with their names, not only in English but also in their own language in a gamified way which makes their learning joyful as well as interesting.

Video:

3.18	E- Samvidhaan App
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Goal	Quality Education
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Group Members: Akshita Bathija, Muskan Talreja, Karan Kewalramani, Sumeet Verlyani

Mentor: Ms. Pallavi Gangurde

Abstract: In this project we are targeting to argue the latest needs communicating females women's rights as human rights. This statement should be perceived as a step forward in recognizing the rightful claims of one half of humanity, in identifying neglect of women's rights as human rights violation and in drawing attention to the relationship between gender and human rights violations. We are launching this app. This app will aim to raise awareness on their rights while showing the potential of new technologies to foster gender equality and empowerment of women.

Video:

3.19	Elearning: Learn vigorously
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Goal	8: Decent work and economic growth.
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Group Members: Sakshi Valecha, Varsha Makhija, Tisha Jeswani, Dipti Hemnani

Mentor: Mrs. Sujata Khandaskar

Abstract: The E-learning environment is gradually replacing traditional education institutions. Since it does not support physical activities it became a question of concern. This website makes a time table which follows a pomodoro technique. A given task is performed for 25 minutes and a short break of 5 minutes is taken. Focusing on healthy learning, this domain explores doing some exercises and also solving the quizzes based on the syllabus.

Video:

3.20	PsyMoCare
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Goal	3. Good health and well being
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Group Members: Tanvi Naik, Ajay S. Iyer, Sanika Hadap, Maanas Ruchandani

Mentor: Mrs. Sujata Khandaskar

Abstract: Telehealth is the use of digital information and communication technologies to access health care services remotely and manage your health care. Telepsychiatry, also termed as telemental health or e-mental health, is broadly defined as the use of ICT to provide or support psychiatric services across distances. "PsyMoCare" is an online interactive mobile based application which will provide a better platform for those in need of mental health assistance by interacting with the psychiatrist using the latest technology. It will reduce the travel expenses and virtually decrease the distance between the patient and the doctor. The main aim of this app is to provide mental help to each and every strata of the society.

Video:

3.21 Pharmafirst

Goal We care for your well-being.

Group Members: Aradhya Ingle, Anjala Goreja, Vidisha Jadhvani

Mentor: Mrs. Sujata Khandaskar

Abstract: A price comparison website acts as a platform or medium between the consumers and the sellers. It also acts as a tool to help consumers increase their price consciousness so that they will not feel cheated by the advertisement from the retailers that claimed they are offering the cheapest price but the reality happened to be otherwise.

So, In today's times it is getting difficult to get our desired medicines and that too at a cheap price, so here we are introducing 'PHARMFIRST', which compares the medicine prices and deals across e-medical stores.

Video:

3.22 Educating and Training for under-privileged kids

Goal 4: Quality Education

Group Members: Riddhi Labde(24), Neha Valecha(61), Janvi Paryani(37), Priti Shamnani(50)

Mentor: Mrs. Sunita Sahu

Abstract: In this project, we are targeting education for under-privileged kids. We are providing an online platform that could help them to clear their concepts & doubts which will take them closer to their goals. One of the most common problems students are facing is that most of the system requires paid subscription to access their course which is not affordable by everyone. The system will offer free education to all kids out there by just registering as a student or mentor. There is provision for collaborators to upload the study material.

Video:

3.23	Parinaam Result assessment Tool
Goal	Quality Education
Group Members: Raj Tandon, Aaryan Mahadik, Tarun Sharma	
Mentor: Mrs. Yugchhaya Galphat	
<p>Abstract:Managing data in universities has become more and more challenging. Managing data using numerous spreadsheets has become a daunting task. Linking countless spreadsheets to each other is certainly time-consuming and tedious. In university, the teachers have to deal with spreadsheets in order to manage the data of students as well as their own data. The teacher has to enter data like name, designation, department name, etc. and map parameters like POs (Program Outcomes) and COs (Course Outcomes). Then they have to apply various formulas in order to get the required values. So, all this data has to be entered into different spreadsheets, then new spreadsheets have to be made specifically for the calculation of the data in the old spreadsheets. Linking these new and old spreadsheets together is a hassle. Then new formulas have to be applied on particular cells of the spreadsheets which is even more time-consuming. This is why an effective Database Management System is required to make sure that the data of students and teachers is protected and managed properly. This can be done with the help of spreadsheets, but a better alternative is required which is more user friendly. Parinaam is a website that does just that. It is a website which helps teachers to manage their important data in the best way possible. It is a website which has an inbuilt Database Management System which will not only store the data of the class but will also help to generate reports without having to put formulas into it.</p>	
Video:	
3.24	Parinaam: Modern education to make poor children compatible
Goal	Quality Education
Group Members: Ayush Gerra(19), Anisha Rohra (48), Ketaki Sahasrabudhe(49)	
Mentor: Mrs. Pallavi Saindane	
<p>Abstract: Education has become the basic necessity for all. Being so valuable, the price we pay for education is increasing day by day leaving the underprivileged unable to educate themselves to the finest. Still, even if they are admitted to a school, the lack of proper infrastructure devoids them from understanding the core concepts which is a wrong learning methodology. Instead they mug up the entire textbook without even understanding it. Besides, there is no space for creative learning or thinking and students are always bound to a specific syllabus. Hence to achieve the sustainability goal of quality education, we aim to provide quality education to underprivileged children for free of cost. Our main objective is to improve the child's overall development by enhancing their communication skills, conceptual understanding, critical thinking, and confidence.</p> <p>To devise a proper learning environment, we are developing an android native app called Shiksha that provides many features. Apart from the existing features(i.e. video lectures provided by certified mentors, forum for doubts discussion) available on different apps, we will ensure that the students would be able to upload experimentation videos based on what they have learned, ensuring experiment based learning for each concept and get rewarded for the same. These rewards will be promising enough to motivate the students to educate themselves. Lastly, the content would be regularized on the basis of quality and feedback of students.</p>	

Video:	
3.25	Ikshana:An App for homeless Elderly
Goal	Good Health and Well Being
Group Members: Prathamesh Jawale, Manav Vishwakarma, Rajveer Tolani, Mayank Wadhvani	
Mentor: Mrs. Pallavi Saindane	
<p>Abstract: Ikshana is an app which provides a medium between donor and local NGOs wherein donors can donate things required by the NGOs. The project seeks to support NGOs to provide livelihood promotion and social inclusion services to the poor and low income clients in rural and semi urban areas with innovative solutions. This project is aimed at developing an application that provides required things by the members of an NGO. The main aim is to support local NGOs by creating a medium between the public and the NGOs.</p>	
Video:	
3.26	Time Table Management System
Goal	4 - Quality Education
Group Members: Attreyee Mukherjee(31), Saumya Tripathi(58), Amogh Inamdar(16), Yashodhan Sharma(52)	
Mentor: Mr. Richard Joseph	
<p>Abstract: Although majority college organization work has been mechanized, the lecture timetable preparation is still commonly done by hand due to its inherent difficulties. The physical lecture-timetable preparation demands significant time and effort. The manual lecture-timetable scheduling is a limitation fulfillment problem in which we find a result that satisfies the given set of constraints. Most of the colleges have a number of different courses and each course has 'n' number of subjects. Now there are limited faculties teaching more than one subject. So now the timetable needed to schedule all the faculty at their provided time slots in such a way that their timings don't overlap and the timetable schedule will make the best use of all the faculty subject demand.</p>	
Video:	
3.27	Mall Navigation map
Goal	11 Sustainable cities and communities

Group Members: Karuna Hotumalani, Somnath Batra, Kashish Jadhvani ,Disha Tardeja	
Mentor: Mrs.Veena Trivedi	
Abstract: The indoor navigation application should allow users to easily find their way to the desired stores, display detailed information, and the latest promotions offered by each store. The indoor navigation application must be able to provide more robust, reliable and accurate indoor navigation to the users. This application only relies on the Wi-Fi positioning system (WiPS/WFPS) technique, which is a Wi-Fi-based location system. This technique enables the application to plot the shopper's current location on the mall's map and further provide indoor navigation from and to any location in a mall. application using a Wi-Fi positioning system which allows the shopper to navigate their ways in shopping and receive the information on each of the stores.	
Video:	
3.28	Travel Buddies
Goal	Decent Work and Economic Growth
Group Members: Anchal Motwani (D7B-30), Darpan Moorpani (D7A-43),Shubham Chelani (D7A-05)	
Mentor: Mrs.Veena Trivedi	
Abstract: Tourism has a few major elements – destinations, attractions, sites, accommodation, and all ancillary services. The need for a robust and dynamic tour management application has been around since the advent of the tourism concept. Thus we have developed a WEBSITE to provide the best travelling services to the customers and travel agents. The objective of this project is to develop a system that automates the processes and activities of a travel agency. It is tedious for a customer to plan a particular journey and have it executed properly. This project is developed to replace the currently existing system, which helps in making the trip easier and stress free for the tourists. The proposed system is highly automated and makes the travelling activities much easier and flexible. The users can get the very right information at the very right time. This will increase the trust of the customer into the tourism company as well.	
Video:	
3.29	E-Plastic Management System
Goal	6: Clean Water And Sanitation
Group Members: Ujwal gangwani(D7C-15), Dinesh Ubrani(D7B-59), Gaurav Gurnasinghani(D7B-18)	
Mentor: Mrs.Prerna Solanke	

Abstract: Waste management is a multidimensional problem that requires technology, economics, and sociocultural and political activities to go hand in hand. The objective of this project is to manage/process recycling online. The request for recycling placed by the users should be fulfilled by the admin. We tend to make a form available for users to fill in the details about their location and the plastic waste which they want to recycle and they get e-coins for that which they can use on our website. The user can also do online shopping for biodegradable products. The order goes through various payment phases till it finally reaches the customer.

Video:

3.30 **Event Management System**

Goal **8: Decent work and Economic growth**

Group Members: Manish Mulchandani, Swaraj Khadge, Mayuresh Sawant, Manan Dadlani

Mentor: Mrs. Prerna Solanke

Abstract: The Event Management System aims at promoting the systematic arrangement and execution of events in a smooth, professional way. The goal is to provide the client with a neat prioritized event list and also have a Dedicated Personal Support (DPS) staff that will assure that the event is executed with most precision. The core idea of the program is to manage the complexity of events to be carried out in today's hectic life. As the number of occupations keep growing, it becomes very important to convey the information to the concerned person with less time and more efficiency. With a precisely calculated list of events that have maximum efficiency, the company's success is almost the cakework. This is why there is a need to employ an effective Event Management System that will provide the user with just the right amount of time for the number of events that the user needs to put in.

Video:

3.31 **FOOD WASTE DONATION SYSTEM**

Goal **Goal 2 - Zero Hunger**

Group Members: Aryan Raje (70), Arya Raje (69), Prasad Lahane (68)

Mentor: Mrs. Prerna Solanke

Abstract: Our Project - Annapurna - "No one stays hungry" tends to provide a solution to this issue. When food is being wasted or thrown away, especially in a metropolitan city, it can be given to those in need. Annapurna provides features such as donating food and receiving food that easily helps the user to save food along with give his handful for community service.

Video:

3.32	Local Buddy
Goal	Goal 8: Decent work and Economic growth
Group Members: Kalpana Gurnani, Prerna Banswani, Hiren Karwani, Manav Beri	
Mentor: Mrs. Manisha Mathur	
<p>Abstract: While traveling we always like to meet like minded people and experience the entirely new culture of their country. If you have ever wanted to meet new people while traveling this website has made it a whole lot easier for you to do so .Via this site the traveler can make use of local buddy and make a new friend who can help them to know more about the new place that they are traveling to. Users would first have to set their profile and choose the city they are traveling to. After this the user will be shown multiple option of profiles who stays in that location. He can choose the profile and can get in touch with the person. This way the user can get a local person who can be a friend in an unknown city to the user .</p>	
Video:	
3.33	E-HAAT
Goal	8 Decent work and Economic growth
Group Members: Anjali Aghicha, Rishi Kathpal, Tanya Lilani	
Mentor: Mrs. Manisha Mathur	
<p>Abstract: Haat is an online marketplace that provides a platform for small-scale farmers and artisans to sell their locally produced and sustainable goods. We offer a diverse range of farm-fresh produce and unique artistic products, from handmade ceramics and jewelry to paintings and home decor items. At Haat, we prioritize the ethical and environmentally friendly production of goods, supporting fair trade and sustainable farming practices. Our platform offers a secure and convenient shopping experience, with easy navigation and fast shipping. By shopping on Haat, you can support local and small-scale producers, promote sustainable living, and have access to high-quality, one-of-a-kind products.Our platform connects consumers with farmers and artisans from around the district, providing access to high-quality, sustainable, and locally produced goods. From fresh fruits and vegetables to handcrafted pottery and jewelry.</p>	
Video:	
3.34	My Assistant
Goal	8 Decent work and Economic growth
Group Members: Pratham Karia, Chirag Mangtani, Chirag Santwani, Nikhil Dhanwani	
Mentor: Mrs. Manisha Mathur	

Abstract: A voice assistant that uses the user's voice to take commands and then processes and gives output according to that in audio as well as text. The main focus of the voice assistant is to perform basic functions like searching and playing videos that the user wants, open softwares, websites, etc. My assistant is a powerful tool that allows you to automate the sending of WhatsApp messages and quickly retrieve search results from Wikipedia. It can also play songs on command, making it a versatile and convenient companion for your daily tasks. With this assistant, you can save time and effort by automating routine tasks, allowing you to focus on more important things. Whether you need to send a quick message to a colleague or want to learn more about a specific topic, this assistant has you covered. Simply give it a command and watch as it handles the task with ease.

Video:

3.35 Web Farmer Assistant

Goal 11 Sustainable cities and Communities

Group Members: Karan Khatri, Nikhil Makhija, Prakash Meghani

Mentor: Mrs.Priti Joshi

Abstract: Using Farmer Assistant people can see the benefits of using a more precise approach to manage crops with additional information, the tool provided by precision farming and other information technologies have not yet moved into mainstream agricultural management. The increased complexity of the systems inhibits easy adoption and makes calculations as to the financial benefits uncertain. These issues can be resolved by improving the decision making process through better Management Information Systems, improved data interchange standards and clear management methods. The starting point has been the identification of the current and future data, information and knowledge management needs on the farms, as well as on the way that these needs will evolve in the future and that will influence farm data, farm information and farm knowledge management systems. At the moment, the utilization of scientific models together with the large amounts of data in different formats produced by modern Farm machinery, sensors located within the farm, remote sensing, etc. is still an open area of research and new methods are developed continuously. The seamless incorporation of new functionality and assisting features into an existing system is of paramount importance.

Video:

3.36 Smart Community

Goal 9: Industry Innovation and Infrastructure

Group Members: Piyush Malviya, Himesh Hotwani, Kunal Khubchandani, Amaan Radhanpura

Mentor: Mrs. Sunita Suralkar

Abstract: We in our project have brought a solution in which we place sensors in roads and our sensors will sense if any accident has occurred and it will alert the people in a radius of 1 km and also an emergency message or SOS will be sent to the nearby hospital which provides service 24x7.

Another solution is that we can use the parking space very efficiently in which our sensors will sense the parking space available and let the driver know where the space is available so that he can directly go to the free parking space. Another solution we can propose is efficient usage of electricity by street lights. What we can do is put sensors which will be having a sensing radius of 1km. So if there is a vehicle passing by the

sensor will sense the vehicle form that particular range and switch on the street lights. Then after the vehicle passes by then the street lights will switch of again therefore conserving electricity.

4	<u>IMAGE PROCESSING VIRTUAL AND AUGMENTED REALITY</u>
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4.1	Face Recognition Based Attendance System
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Goal	4.Quality Education
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Group Members: Parth Wande, Aniket Pradhan,Sarvesh Dongare,Jay Thakker

Mentor: Dr. Dashrath Mane

Abstract: Throughout history and into modern times,humans have purposely cleared land to make space for agriculture,industries,and grazing domestic animals. Currently, high amount of deforestation is occurring in tropical forests,to improve infrastructures such as buildings,roads,etc. Farming is a big contributor of deforestation.Farmers clean large areas of land by burning them,allowing the ash to fertilize the land for crops.However, the land is only fertile for a few years,after which the farmers move on to repeat the process elsewhere, this reduces the green cover on earth .Hence,in order to bring back this diminishing greenery, we are aiming to design a software to connect the ones who want to help improve the natural condition of forests in financial aspects as well as in providing physical help.

We intend to bridge the gap between the persons who can donate their money and the ones who can provide their time to plant trees like schools, NGOs etc. Once the donors donate money for this cause ,they can stay assured of the plantation process as the system will also provide regular updates on the status of plants. This platform will also motivate the schools and related organizations to take up more such projects so that the ultimate goal of restoring nature can be achieved.

Video:

4.2	Cloth Material Identifier
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Goal	9 Industry Innovation and Infrastructure
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Group Members: Nupur Mirani, Jiya Lund, Komal Lund, Manav Daryani

Mentor: Ms. Pallavi Gangurde

Abstract: In this 2D images will be taken. Through analysing digital images the extraction is designed. The clothing fabric can extract folds in the fabric through processing . Different fabrics can be processed by considering parameters like width, length etc. Then the image will be compared with the image already present in the database that these indicators can be taken as reflection and description for fabric identification.

Video:

4.3	Image Processing Virtual and Augmented Reality
Goal	4. Quality Education
Group Members: Sadhak Kumar , Ravi Valecha , Vinesh Paralkar , Vaibhavi Shetty	
Mentor: Mrs.Sunita Suralkar	
<p>Abstract: Visual representation of data structures is essential to understand their functionality and behavior. In this paper, we explore the use of Unity game engine to create interactive and dynamic visualizations of data structures. We present the design and implementation of a software tool that allows users to visualize and manipulate various data structures such as arrays, linked lists, stacks, and queues in real-time. The tool utilizes Unity’s powerful graphics engine, animation system, and user interface to create an intuitive and engaging experience. We also evaluate the effectiveness of the tool through a user study, which shows promising results in improving understanding and retention of data structure concepts.</p>	
Video:	
4.4	Fitness Activity Recognition using Smartphones
Goal	Goal 3: Good Health and Wellbeing
Group Members: Vedang Rathi,Johan John ,Bhanu Shamdasani,Amisha Chandwani	
Mentor: Mrs. Sunita Suralkar	
<p>Abstract: Our fitness activity tracker app is a user-friendly tool designed to help individuals track and monitor their walking activity. The app utilizes different sensors to accurately track the user's route, distance, and speed during their walk, providing real-time feedback and data analysis. Users can set daily, weekly, or monthly walking goals and track their progress towards achieving them. The app also features a built-in calorie counter that calculates the number of calories burned during each walk, providing users with a comprehensive overview of their fitness journey. Our walk tracker app offers a personalized experience to help users stay active and achieve their health goals.</p>	
Video:	
4.5	Facial recognition based attendance management system
Goal	9. Industry, innovation and infrastructure
Group Members: Sakshi Kirmathe, Piyush Chugeja, Deven Bhagtani, Manraj Singh Viridi	
Mentor: Mrs. Yugchhaya Galphat	

Abstract: In this digital era, the face recognition system plays a vital role in almost every sector. Face recognition is one of the mostly used biometrics. It can be used for security, authentication, identification, and has many more advantages. This system is proposed majorly for managing attendance which is often seen as a tedious task. The ability to compute the attendance percentage becomes a major task as manual computation produces errors, and also wastes a lot of time.

This system takes attendance electronically with the help of face recognition. Face recognition has been around for ages. Taking a step forward, we can mark attendance using the same. Attendance is marked after student identification. For student identification, a biometric (face) identification-based system is used. After recognition, the records of the attendance are stored in a database.

Video:

5 **Networking, Security and Blockchain**

5.1 **Zero Hunger in India**

Goal **Goal 2 - Zero Hunger**

Group Members: Khwaish Shahani , Bhavika Valecha,
Soham Kelaskar , Jaitra Shahani

Mentor: Mrs. Sunita Sahu

Abstract :

Wasting food is the biggest problem in our society. The website Share A Meal for food donation acts as an interface between the users who are looking for a channel to give the excess food without wasting it. It enables us to donate the excess food by notifying nearby users with the details of the food that is available. The required (NGOS) users claim the notification. SHARE A MEAL can help in minimizing hunger so that needy people get two meals a day. So we build a system to share the food that is wasted in restaurants and this system will be very beneficial to NGOs. Also, there is no real interaction between the donor and recipient since everything is disclosed by intermediates.

Video: https://drive.google.com/file/d/1ZSmKjsielgOnTIIK_mi021Q_-ku69bi0/view?usp=drivesdk