DJ InIT. AI

Devising Intelligence for Tomorrow

DJ INIT.AI ANNUAL REPORT

2023-2024

Club Report

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A. Members of the Club

Faculty in-Charge –Prachi Satam , Priyanca Gonsalves

Presidents	
Vraj Desai (Research and Development)	Pradhyuman Pandey (Outreach)
Vice Presidents	
Shlok Mangle	Karna Mehta

Senior Mentors -
• Ashray Gattani
• Divya Patel
• Gautam Malpani
• Jash Shah
• Rujuta Joshi
• Jainil Shah
• Krishang Shah

Secretary ● Jeniel Shah	**Junior Mentors** ● Shehal Shah ● Harshvi Shah ● Atharva Rajmane ● Smit Shah ● Aryan Gupta ● Anuj Bohra ● Prince Doshi ● Rohit Rai ● Sarthak Mahale ● Viral Dalal ● Krisha Borana ● Adit Kanji ● Mit Shah ● Kushal Vadodaria
Technical Heads ● Gurjit Singh ● Vedant Kesharia ● Rhythm Shah ● lsha Patade	
Publicity Heads ● Tanvi Bhide ● Ayushi Uttamani	
Creatives Heads ● Kriti Derasadi ● Fahad Siddiqui ● Tirth Parekh	
Marketing Heads ● Jeet Doshi ● Khushi Shah	
Logistics Heads ● Jeet Shah ● Jay shah	

Technical Co-committee ● Akshay Kulkarni ● Aryan Singh ● Priyansh Shah ● Dhara Mehta ● Amit Upadhyay	**Creatives Co-committee** ● Aryan Sharma ● Sakshi Goda ● Sagar Harsora ● Shriya Deshpande ● Archie Mehta ● Kashvi Mahetaliya
Publicity Co-committee ● Abhinav Nair ● Rutvi Patel ● Surajsingh Rajpurohit ● Kanishk Maheshwari ● Tanish Bagadia ● Neel Parekh	**Marketing Co-committee** ● Tanisha Kanal ● Prathmesh Kulkarni ● Vedica Mrudal ● Kunal Murudkar ● Nikunj Raikundliya ● Rushank Naik
Logistics Co-committee ● Vansh Mehta ● Kashvi Rita ● Yug Gupta ● Vinit Sorathia ● Ram Palan	

B. Year in Review

It has been a year of change and improvement at DJ InIT.ai Club. We have focused on our team members and worked on refining their skill sets, so that we can continue to deliver our hallmark events and activities. This year we focused on :

- **AI Lecture Series** : This series is aimed at lecturing and mentoring students who are in the second year of their degree about AI and its fundamentals. Students who attend the lectures are given assignments that help them strengthen the foundation of the topics taught in the lectures.
- **Event:** DJ InIT.AI's grand event, Data2Knowledge 2.0 Datathon.
- **Website:** Redesigned the website of DJ InIT.ai adding new functionalities.
- **Research Projects**: Junior mentors are guided and mentored by the Senior mentors to work on projects that enable them to do quality research work.

The following sections give a detailed review of each of the activities/events mentioned above.

C. Achievements

1.) Jeniel Shah (Secretary), Gurjit Singh (Technical Head) along with others won the second positon at the Crescendo 24 hrs Hackathon at Fr. Conceicao Rodrigues College of Engineering,Bandra.

2.) Shlok Mangle (Vice President),Rujuta Joshi (Senior Mentor), Ashray Gattani (Senior Mentor) Rhythm Shah (Technical Head) has won an "Honourable Mention" in the HackAI hackathon organised by Fetch.AI conducted at Techfest, IIT Bombay. They will be receiving grants, internships and certificate of excellence from Fetch.AI.

3.) Shlok Mangle (Vice President) , Vedant Kesharia (Technical Head) , Isha Patade (Technical Head) have won top 2 prizes in Datamatics Hackathon in Techfest by IIT Bombay worth ₹1.25L.

4.) Shlok Mangle (Vice President) , Pradhyuman Pandey (President) , Rujuta Joshi (Senior Mentor) along with others cleared the zonal round in Aavishkar Competition and selected for City Finals which was scheduled on 19th December. They worked on the problem statement SafarSamarth - Revolutionizing Road Safety Through AI-Driven IoT Solutions.

5.) Anuj Bohra (Senior Mentor) secured runners up position in VCET Hackathon 2023 and winners in Virtual Study Buddy track among 40 teams

D. Lecture Series

1. Lecture Series – Bootcamp 1 (Python and Data Science)

Venue: Classroom 66 and Lab 3, DJ Sanghvi College of Engineering
Date: 29th August 2023
Time: 11:30AM to 2:30PM
Class: SY BTech I.T.
Attendance: 50
Topic: Basics of Python and Linear Rejogression
Conducted by: Shlok Mangle and Rujuta Joshi

Description:
The bootcamp lecture held for second-year students was a comprehensive introduction to Python programming and linear regression. It began by explaining the significance of Python in data science and machine learning, followed by a practical setup of the Python environment and a concise overview of fundamental Python concepts. The lecture seamlessly transitioned into linear regression, elucidating its core principles and demonstrating its implementation using Python libraries. The hands-on exercises provided students with a tangible understanding of both Python and linear regression, fostering a strong foundational knowledge. The Q&A session encouraged engagement, while feedback revealed a positive response overall. To enhance future iterations, offering follow-up sessions and recommending additional resources for self-study were considered. Overall, the lecture successfully equipped second-year students with essential skills for data analysis and machine learning, setting them on a promising path of exploration and growth in these fields. The lecture had a footfall of 50 students across all three divisions. The response was a positive one with demands for similar sessions in the future.

Program Outcomes mapped

PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	P10	P11	P12
1	1			1							1

Program Specific Outcomes mapped

PSO1	PSO2	PSO3	PSO4
1	1		

Session in the going

Mentors for the day

2. Lecture Series – Introduction to SIH

Venue: Classroom 64, 65 and 66, DJ Sanghvi College of Engineering
Date: 31st August 2023
Time: 9am to 12pm
Class: SY and TY BTech I.T.
Attendance: 150
Conducted by: Shlok Mangle, Pradyuman Pandey

Description:
Previous winners of the SIH competition provided an explanation of what the SIH competition entails and outlined how it progresses from the beginning to the end. They directed and instructed us, as well as offered general counsel on what to do and what not to do. They discussed the challenges they faced during the competition as well as the rewards they received for taking part in it. They offered advice on the selection of PSs, the formation of teams, tips for the internal hackathon, and tips for the preparation that should take place before the hackathon. After that, the pupils were given the opportunity to ask questions and give their responses. This workshop was attended by close to 150 students and received a lot of positive feedback from those attending it.

Previous winners guiding the students

Program Outcomes mapped

PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	P10	P11	P12
1	1			1							1

Program Specific Outcomes mapped

PSO1	PSO2	PSO3	PSO4
1	1		

3. Lecture Series – GitInit

Name of the Speakers: Gurjit Singh, Rhythm Shah,Vedant Kesharia and Isha Patade

Venue: Classroom 53, DS Department

Date: 16th September 2023

Time: 2:30 pm– 4:30 pm

Class: Second Year BTech IT

Topic: Introduction to Git and Github

Description:

The lecture on Git and GitHub was a comprehensive and hands-on session aimed at empowering participants with a solid understanding of these essential tools for version control and collaboration in software development. It provided the knowledge and skills needed to effectively utilize these tools in various projects. The lecture covered the fundamental concepts of version control, introducing participants to Git, a distributed version control system. Participants learned about repositories, commits, branches, merging, and conflict resolution, as well as the basic commands and workflows used in Git. Furthermore, the lecture delved into the powerful features of GitHub, a web-based platform for hosting Git repositories. Participants explored collaboration techniques such as branch management, code review, and team coordination using GitHub's pull requests, issue tracking, and project management capabilities. Throughout the lecture, participants engaged in hands-on exercises, allowing them to apply the concepts and commands in real-world scenarios. The session also encouraged active participation through Q&A sessions, ensuring that participants received practical guidance and clarifications from experienced instructors. By the end of the lecture, participants had a strong grasp of Git and GitHub, enabling them to confidently utilize these tools to manage version control, collaborate effectively with team members, and streamline their software development projects.

Program Outcomes mapped

PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	P10	P11	P12
1	1			1							1

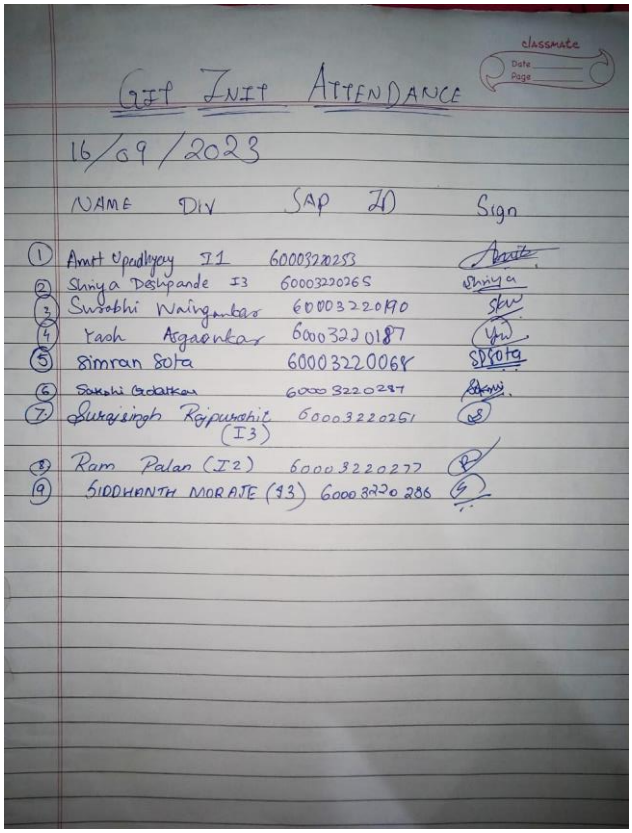
Program Specific Outcomes mapped

PSO1	PSO2	PSO3	PSO4
1	1		

Photographs:

Students and Mentor in the GitInit Session

Attendance of the event :



GIT INIT ATTENDANCE

16/09/2023

	NAME	Div	SAP ID	Sign
1	Amit Upadhyay	I1	60003220253	
2	Shriya Deshpande	I3	60003220265	Shriya
3	Subhobhi Waingankar		60003220190	Sbw
4	Yash Agaonkar		60003220187	YAW
5	Simran Sota		60003220068	SSota
6	~~Sakshi Gadekar~~		60003220247	
7	Durgasingh Rajpurohit (I3)		60003220251	
8	Ram Palan (I2)		60003220277	
9	SIDDHANTH MORAJE (I3)		60003220286	

Lecture Series: PyInIT

Speakers (3rd October) – Adit , Shehal , Harshvi, Sarthak , Prince,Anuj

Speakers (5th October)- Atharva,Aryan,Krisha,Viral,Kushal,Smit,Rohit,Mit

Venue: Lab 1 and Lab 2, DS Department

Date: 3rd and 5th October,2023

Time: 2:30 pm– 4:30 pm

Topic: Introduction to Python Libraries

Description:

The lecture was conducted for Second year IT students which offered a comprehensive exploration of key tools and techniques in Python for effective data handling and visualization. Participants learned to master Python and its vital libraries such as Numpy and Pandas, enabling smooth data manipulation.,Numpy, a powerful library for numerical computations, allowed students to perform complex mathematical operations with ease. Pandas, another essential library, provided robust data structures and data analysis tools, enabling smooth and efficient data manipulation. Through hands-on exercises and practical examples, students learned how to use these libraries to handle various data types, perform data cleaning, and implement advanced data processing techniques.Additionally, the lecture focused on creating compelling visualizations using Matplotlib and understanding key aspects of Seaborn. They learned to generate a variety of plots, such as line graphs, bar charts, histograms, and scatter plots, to effectively communicate data insights. The session also covered key aspects of Seaborn, a statistical data visualization library built on top of Matplotlib. Seaborn's high-level interface for drawing attractive and informative statistical graphics helped students understand complex data patterns and relationships more intuitively.The lecture helped the participants gain vital skills for data handling and visualization. The lecture was conducted on 3rd October 2023 for I1 batch and on 5th October 2023 for I2 and I3 batch.

Program Outcomes mapped

PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	P10	P11	P12
1	1			1							1

Program Specific Outcomes mapped

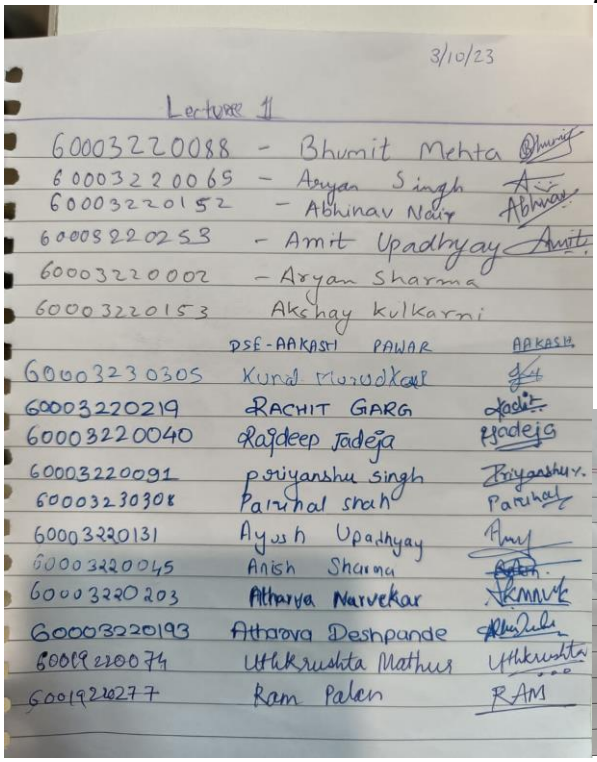
PSO1	PSO2	PSO3	PSO4
1	1		

Photograph:

Session in the flow

Attendance of the event :

Day 1&2



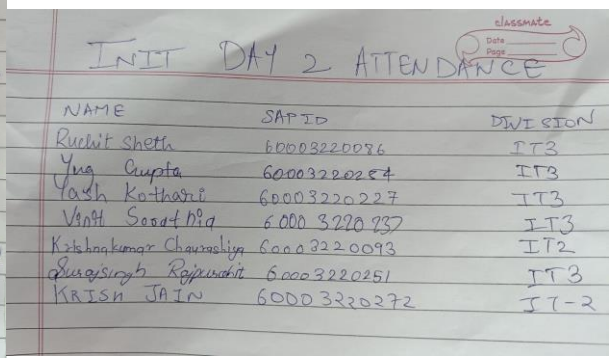
3/10/23

Lecture 1

60003220088 - Bhumit Mehta
60003220065 - Aryan Singh
60003220152 - Abhinav Nair
60003220253 - Amit Upadhyay
60003220002 - Aryan Sharma
60003220153 Akshay kulkarni

DSE-AAKASH PAWAR AAKASH

60003230305 Kunal Murudkar
60003220219 RACHIT GARG
60003220040 Rajdeep Jadeja
60003220091 priyanshu singh
60003230308 Parimal shah
60003220131 Ayush Upadhyay
60003220045 Anish Sharma
60003220203 Atharva Narvekar
60003220193 Atharva Deshpande
60019220074 Utkarshita Mathur
60019220277 Ram Palan



INIT DAY 2 ATTENDANCE

NAME	SAP ID	DIVISION
Ruchit Sheth	60003220086	IT3
Yug Gupta	60003220254	IT3
Yash Kothari	60003220227	IT3
Vinit Sood	60003220237	IT3
Krishnakumar Chauraslya	60003220093	IT2
Suraj singh Rajpurohit	60003220251	IT3
KRISH JAIN	60003220272	IT-2

Lecture Series : GANS and LLM

Date: 9th November 2023

Time: 6:30pm-8:00pm

Mode : Online (Google meet)

Topic: Introduction to GANS and LLM's

Participants:

Speaker:

Gautam Malpani

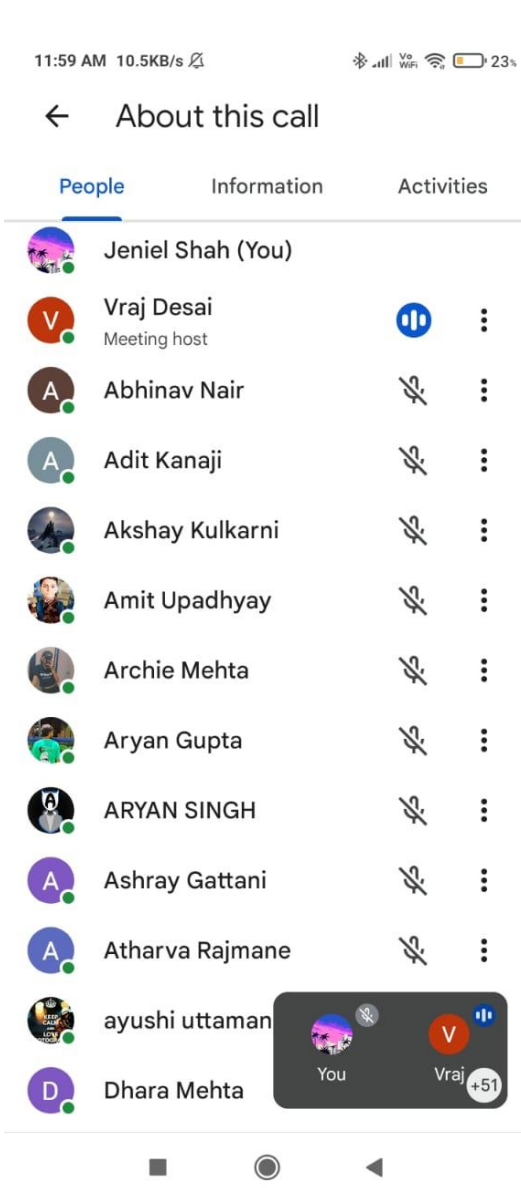
Attendees (Junior Mentors):

All Junior Mentors had attended the session

Description:

The session commenced with an insightful introduction to Generative Adversarial Networks (GANs) and Large Language Models (LLMs), ensuring participants gained a clear understanding of these advanced and complex technologies. The speaker skillfully simplified the explanations, making these intricate concepts accessible even to junior mentors, thereby fostering an inclusive learning environment.
GANs, a class of machine learning frameworks designed by Ian Goodfellow and his colleagues in 2014, involve two neural networks, the generator and the discriminator, which contest with each other in a game-like scenario. This introduction covered the foundational principles of how GANs function, including their architecture, the training process, and their applications in generating realistic data samples such as images, videos, and audio. The speaker used relatable analogies and real-world examples to demystify the technology, ensuring that even those with limited prior knowledge could grasp the essentials.
As the meeting drew to a close, the speaker shared a wealth of resources to support further exploration and understanding of GANs and LLMs. These resources included a curated list of articles, cutting-edge research papers, and comprehensive online courses. By providing these materials, the session aimed to empower participants to continue their education independently, fostering a culture of continuous learning and curiosity.

Photographs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About this call
People
Information
Activities
Jeniel Shah (You)
Vraj Desai
Meeting host
Abhinav Nair
Adit Kanaji
Akshay Kulkarni
Amit Upadhyay
Archie Mehta
Aryan Gupta
ARYAN SINGH
Ashray Gattani
Atharva Rajmane
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Dhara Mehta
You
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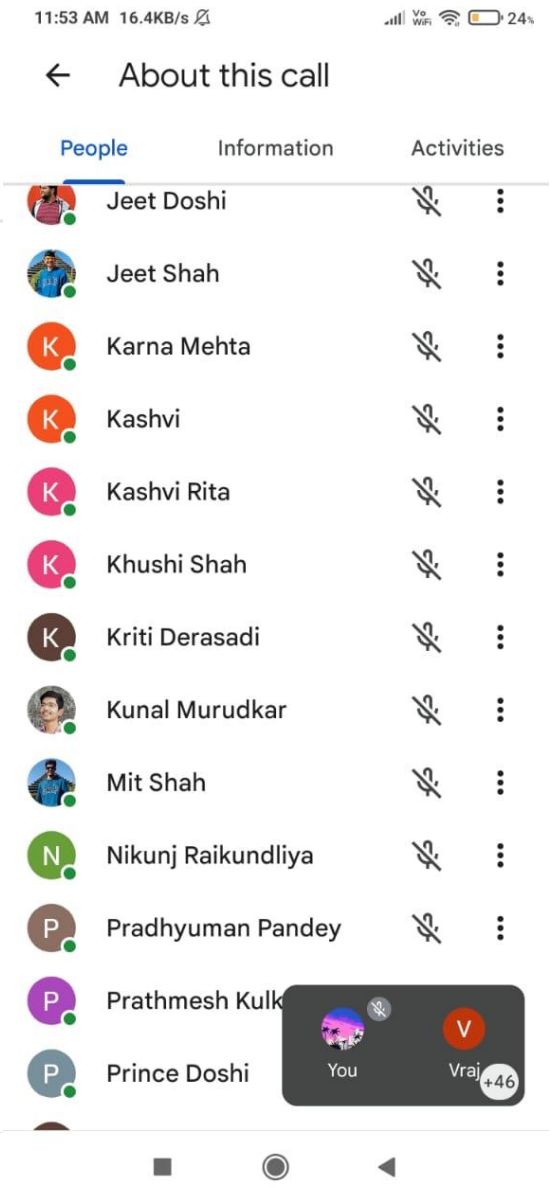
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Jeet Shah
Karna Mehta
Kashvi
Kashvi Rita
Khushi Shah
Kriti Derasadi
Kunal Murudkar
Mit Shah
Nikunj Raikundliya
Pradhyuman Pandey
Prathmesh Kulk
Prince Doshi
You
Vraj
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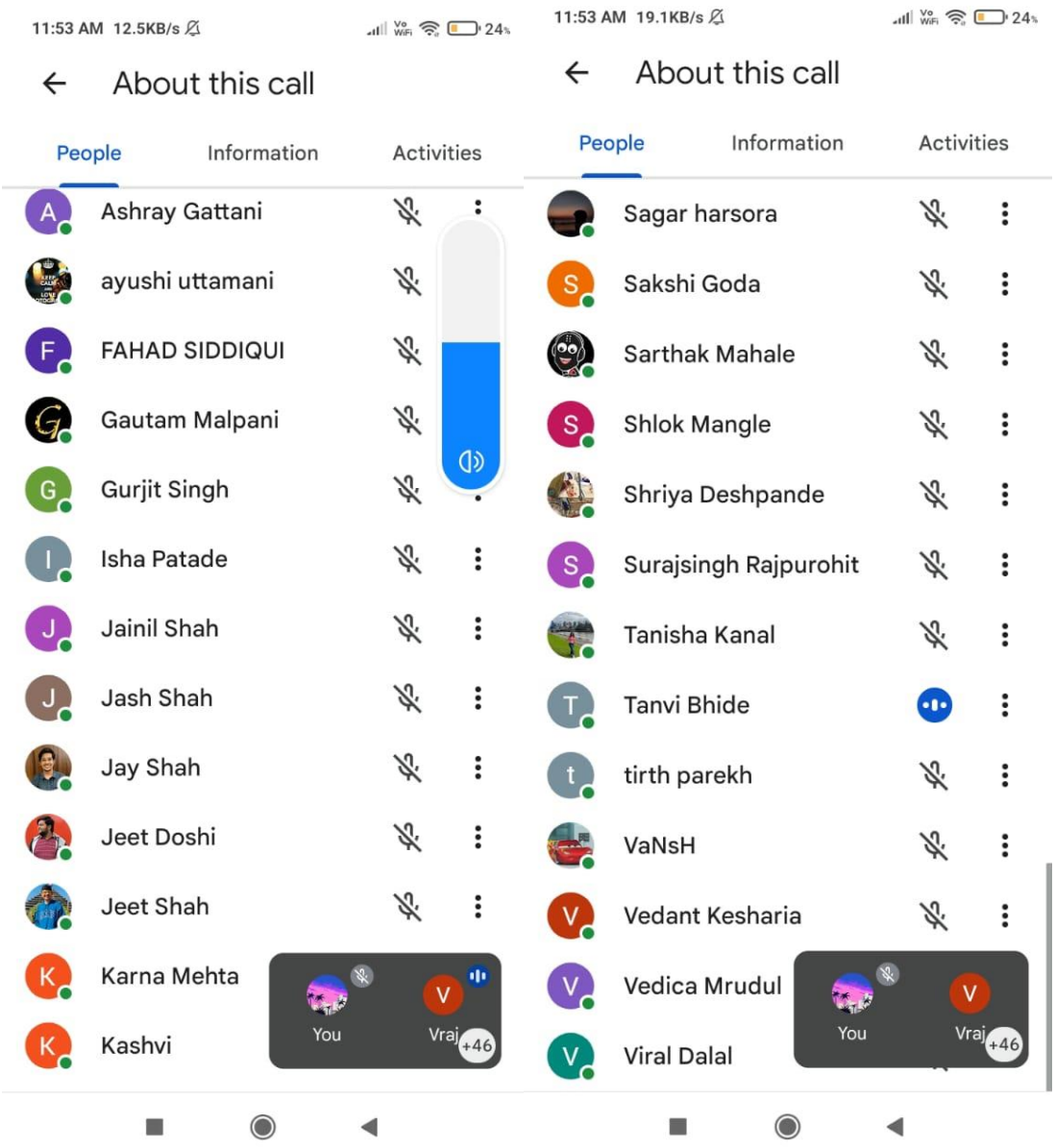
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Jay Shah
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Sakshi Goda
Sarthak Mahale
Shlok Mangle
Shriya Deshpande
Surajsingh Rajpurohit
Tanisha Kanal
Tanvi Bhide
tirth parekh
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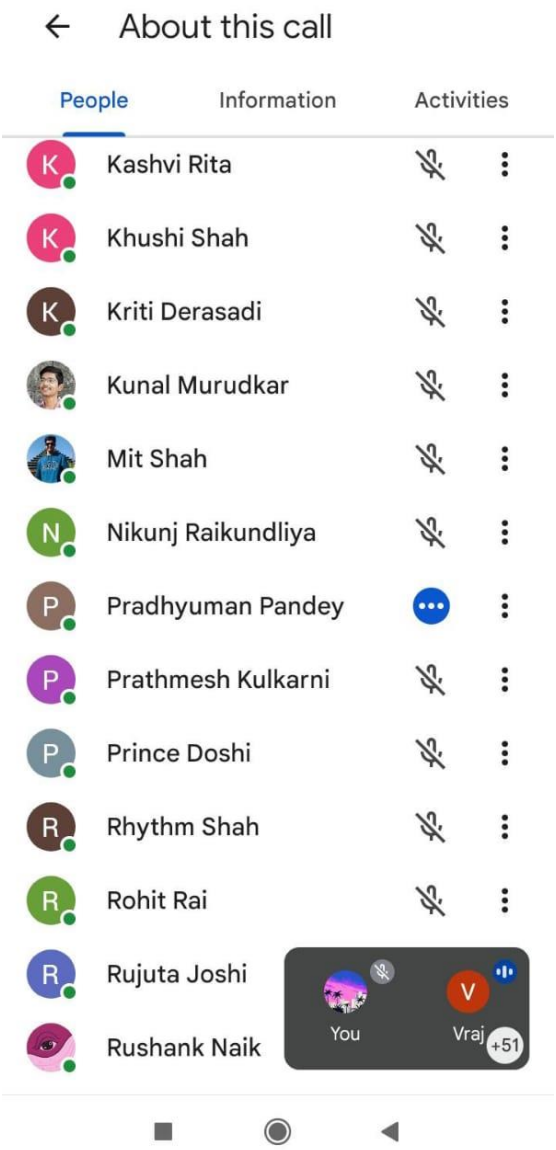
Vedica Mrudul
Viral Dalal
You
Vraj
+46



Program Outcomes mapped

PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	P10	P11	P12
1	1			1							1

Program Specific Outcomes mapped

PSO1	PSO2	PSO3	PSO4
1	1		

E. Research Projects

1. Traffic Forecasting with Spatio-Temporal Graph Neural Networks:

Problem Statement : Traffic forecasting is a critical component of effective transportation planning, resource allocation, and urban development strategies. Accurate predictions of traffic volumes,both spatially and temporally, hold the potential to optimize traffic management, alleviate congestion, and enhance overall transportation efficiency. However,conventional methods for traffic prediction often struggle to capture the intricate spatial and temporal dependencies inherent in traffic data, relying on simplistic machine learning models or statistical approaches that fail to effectively model the complex network structures and dynamic patterns present in transportation systems. The objective of this study
is to forecast traffic volumes for all traffic stations in the region for the upcoming hour, utilizing historical traffic data, as well as contextual features such as month, weekday, and hour of the day as input. By leveraging the powerful capabilities of GNNs, the proposed model aims to outperform conventional traffic prediction approaches and provide valuable insights for transportation planning and management in the Vestlandet region.

Team Members:

- Shehal Shah
- Prince Doshi

2. Real-Time Hypertensive Disease Detection and ECG Summarizing System

Problem Statement : In today's world, heart disease remains a significant global health challenge, but new digital technologies offer promising avenues for improved diagnosis and analysis. This recent project focuses on leveraging advanced techniques to analyze Electrocardiogram (ECG) images specifically to detect hypertensive disease, aiming to simplify the process of diagnosing heart issues by transitioning from traditional paper records to digital formats. Recognizing that heart disease is a leading cause of mortality worldwide, the project underscores the critical need for efficient diagnostic tools. Traditionally, manual interpretation of paper ECG records proved to be time-consuming and complex. However, by embracing digitalization, this project seeks to automate diagnosis, providing rapid medical insights essential for timely treatment interventions.The primary goal of the project is to digitize paper-based ECG recordings so that automated analysis utilizing machine learning methods can be performed. The P, QRS, and T waves are among
the primary heart signals that are separated using techniques such grayscale color conversion and filtering. These signals are then analyzed by a pre-trained machine learning model, which allows for the precise classification of different cardiac diseases.

Team Members :

- Harshvi Shah
- Atharva Rajmane

3. Prompting LLMs with Knowledge Graphs for Enhanced Reasoning

Problem Statement : Large Language Models (LLMs) have revolutionized natural language processing tasks, showcasing remarkable abilities in text generation and comprehension. However, their reliance on statistical patterns learned from massive text corpora often leads to shortcomings in factual accuracy and real-world reasoning. To address this, researchers have explored integrating external knowledge sources, with Knowledge Graphs (KGs) emerging as a promising avenue. KGs represent entities and their relationships in a structured format, offering a rich source of factual information. Several existing approaches leverage KGs to enhance LLMs. Fine-tuning LLMs on KG-derived data allows them to learn relationships between entities, but this process can be computationally expensive and requires retraining for specific domains. Alternatively, knowledge distillation techniques aim o transfer knowledge from a KG to an LLM, but their effectiveness relies heavily on the chosen distillation method.

Team Members :

- Smit Shah
- Mit Shah

4. Content Based Research Paper Recommendation:

Problem Statement : The landscape of financial services, particularly in the domain of loan approvals, stands at a critical juncture where the integration of technology and traditional methodologies determines the ease and efficiency with which individuals and businesses can access financial support. Despite significant advancements in the accuracy of predictive models within this domain, a substantial gap persists in clarifying the decision-making process behind the approval or rejection of loan applications. Traditional methods, while proficient in forecasting outcomes, often cloak the rationale behind these crucial financial decisions in opacity, leaving both applicants and financial institutions to navigate the complexities of loan approvals with limited insight. This problems statement involves ways to bridge these gaps by employing the capabilities of explainable artificial intelligence (AI), focusing on methodologies such as SHAP, ELI-5, and LIME, to unveil the factor.eam Members :

- Sarthak Mahale
- Adit Kanaji

5. Comparative Study between Federated Learning and Medical Data:

Problem Statement : Centralised machine learning models have been widely used for predictive modelling tasks across a variety of domains, including healthcare. These models are trained on aggregated datasets stored in a central server. Yet, worries about scalability, security, and privacy of data have prompted the investigation of substitute strategies. A decentralised machine learning paradigm called federated learning has drawn interest as a possible way to overcome these obstacles. Federated Learning provides an attractive framework for collaborative predictive modelling by enabling model training to be done locally on dispersed

data sources while protecting personal information. In this work, there is a showcase of comparative analysis using Federated Learning for mental health prediction between decentralised and centralised models. The goal is to compare the two methods' performance on a shared dataset and determine their relative advantages and disadvantages. By contrasting it with conventional centralised models, this paper makes use of effectiveness of federated learning in the context of mental health prediction. By conducting this comparative analysis, the project seeks to contribute to the ongoing discourse on the application of machine learning techniques in mental health prediction and provide valuable insights for researchers and practitioners in the field. A range of data sources are used by machine learning algorithms to predict mental health, such as social media activity, behavioural patterns, medical history, and demographic data. By using advanced techniques to find patterns and correlations in the data, these algorithms allow for highly accurate prediction of mental health outcomes..

Team Members :

- Anuj Bohra
- Kushal Vadodaria

6. An Artificial Intelligence Based Approach towards enhanced storytelling for children:

Problem Statement : Great progress has been seen in the last few years in the development of large language models (LLMs). Such models have capabilities of producing automatically generated educational materials purposed to be used by children. However,one big challenge in this is ensuring that the automatically generated material is communicable to a young learner. LLMs generate text well, but struggle to come up with words and sentence constructions that could befit children, meaning that even if it could generate a story, the created story could not fit for kids. LLMs are good in producing stories that can be read easily and have children's vocabulary at a rate appropriate for them. In that light, a research is required to test this extent. The results showed that LLMs perform well in text generation but are incapable of adjusting their language such that the younger readers understand it. That is to mean, realizing the need for the usage of visual storytelling in children's learning, it was also put forward that images can be taken together with the stories that are written down. The goal was to improve children's understanding and interest by using both words and pictures. The goal is to find an approach and findings of a study that sought to examine how language models work with image generation to make the production of educational content suited for kids more effective. This brings together various areas of study, namely, intending to work on making these learning environments motivational and accessible for the smallest children.

Team Members :

- Viral Dalal
- Krisha Borana

7. Enhancing Neural Machine Translation Quality through Adversarial Training with Generative Adversarial Networks

Problem Statement : The problem statement focuses on improving a transformer model that has been specially trained for the English→Marathi translation problem. The fine-tuning procedure is a systematic approach aimed at optimizing the model's performance, ensuring that it accurately and efficiently captures every aspect of languagetranslation. It is not the same as previous approaches that aim at optimizing the possibility of human translations. Adversarial-NMT employs an adversarial training architecture wherein the NMT model is jointly learned with a Convolutional Neural Network (CNN) acting as the adversary. The primary objective of the adversary is to distinguish translations produced by the NMT model from those produced by humans. To fool the adversary, the NMT model seeks to generate precise translations in the interim. Training simultaneously optimizes the NMT model and the adversary using a policy gradient technique. Test assessments on the English→Marathi translation assignment show that Adversarial-NMT surpasses many robust baselines, underscoring its effectiveness in improving translation quality. This highlights threat potential of GANs in developing NMT techniques.

Team Members :

- Aryan Gupta
- Rohit Rai

G. Event – Data2Knowledge

Event Date: 6th February 2024

Event Name: Data To Knowledge 2.0 (D2K 2.0)

DJ InIT.AI embarked on its second datathon, titled 'Data To Knowledge 2.0,' following their successful foray into hackathons. With a foundation of experience in AI and Machine Learning and the triumph of the Python lecture series, InIT.AI members recognized the need for a datathon that stands out from typical college events. This time, the focus was on students with a passion for data science and machine learning, and the inspiration came from the popular series 'Star Wars'.

The IT and CS departments served as the backdrop for the datathon, featuring themed decorations that brought the 'Star Wars' inspiration to life. The response was outstanding, attracting over 250+ teams from various colleges eager to participate. InIT.AI mentors meticulously reviewed resumes, shortlisting 46 teams, each composed of 1-3 members.

Data To Knowledge 2.0, abbreviated as D2K 2.0, was inaugurated by our honourable Principal, Dr Hari Vasudevan along with Head of Department of Information Technology Dr Vinaya Sawant, Faculty Incharge of InIT.AI Prof. Prachi Satam and Prof.Priyanca Gonsalves, and the members of InIT.AI at 10:00 AM on February 6, 2024. The ceremonial lamp was lit and the ribbon was cut, following which the teams were led to their respective labs, which were decorated with the theme of Star Wars.

Dr. Hari Vasudevan, Principal unveiling the event

The problem statements had already been allotted to the teams based on the performance of teams in quiz which was conducted on unstop on 5th February 2024. The problem statements were provided by our title sponsor "Dextra Labs".

PS1: Data Science

Agritech:To Enhance Operational Efficiency through Data Report Insights using a Research Assistant

Organizations routinely generate diverse reports serving distinct purposes, often containing vast datasets. Extracting meaningful insights from these reports is paramount for informed decision[1]making in various business domains. The process of deriving insights from extensive datasets is not only laborious, error-prone, and time-consuming but also constrained by the creative and analytical capacities of the individuals interpreting the data. This limitation hinders the potential breadth and depth of actionable solutions derived from these insights. A pivotal example in the market is from the agricultural industry, where the fertilizer companies distribute subsidies to farmers as a part of government initiatives through a complex supply chain. To ensure the successful execution of subsidy programs, it is imperative to manage stock efficiently and prevent the loss of subsidies. The current manual system relies on field officers to address issues like zero sales and aging stock at wholesalers and retailers end, ensuring subsidy retention

Recognizing this, our organization has implemented a robust system that provides a detailed overview of stock aging at both retailer and wholesaler levels within the designated jurisdictions or districts. This comprehensive Aging Report serves as a strategic tool for key decision-makers responsible for overseeing multiple districts. While Aging Report empowers users with consolidated information regarding the aging status of stock across their entire portfolio of districts, by leveraging this data, extracting valuable distribution insights remains a crucial yet challenging task for users

Introduce a Research Assistant that will help the users gain valuable insights from any Report. To enhance the utility of Data Reports, we propose the introduction of a Research Assistant – a digital tool designed to empower users with valuable insights, regardless of the report's nature. The model should be able to recognize what is the report about and what data the report holds. In the example of Aging Report, Territory Managers will interact with the Research Assistant by asking questions related to the Aging Report. To guide their thought process and clarify the role of the Research Assistant, recommended or sample questions will be visible on the screen. This should streamline the user experience and help Territory Managers understand the potential of the Research Assistant in deriving actionable insights from the Aging Report

PS2 : Computer Vision

Healthtech : Product Positioning Analysis through Image Recognition

Background: In the competitive landscape of the pharmaceutical industry, the strategic positioning of products in retail outlets plays a pivotal role in influencing customer visibility

and sales. To incentivize shop owners for optimal product placement, pharmaceutical companies offer perks and discounts based on contractual agreements. However, the manual inspection and analysis of product positions by Field Officers prove to be a time-consuming and intricate process.

Problem Description: Currently, Field Officers from pharmaceutical companies conduct manual drives, visiting shop outlets to inspect and photograph the positioning of their company's products. The incentives and offers offered to shop owners are contingent upon the visibility and strategic placement of the pharmaceutical products. Higher incentives are granted for products that are immediately visible to customers, while obscured or poorly positioned products receive little to no incentives.

The manual inspection process involves analysing images based on various parameters

for example:

1.Visibility of the product from the shop front.

2.Placement of the product in corners or beside competitors.

3.Lighting conditions around the product.

4.Shelf placement of the product. The angle from which the image was captured (e.g., shop front, sideways, lower angle).

Proposed Solution : Introduce an Image Recognition System for Field Officers, streamlining and automating the product positioning analysis process. The application should empower Field Officers to capture images of the product setup within shops, and the Image Recognition System will analyze these images based on predefined parameters. The system should provide valuable insights to Field Officers and assist in deriving the incentive value for each product in every shop

PS3: MLOps

Problem Statement: Develop an MLops Pipeline for Bias Detection and Mitigation in Heart Disease Diagnosis Models

Objective: Create an end-to-end MLops pipeline that automates the identification and mitigation of potential biases in Heart Disease diagnosis models, aiming to enhance fairness and reliability across diverse demographic groups. The goal is to ensure equitable predictions and address disparities that may arise from biases in the training data or model architecture. Participants are encouraged to incorporate ensemble techniques to enhance model accuracy.

Background: As machine learning advancements revolutionize healthcare diagnostics, it is crucial to guarantee that models are unbiased and provide fair predictions for various patient populations. In the context of Heart Disease diagnosis, biases can lead to accuracy

discrepancies among different demographic groups. This Datathon challenges participants to build a comprehensive MLops pipeline to detect and mitigate biases in Heart Disease diagnosis models

PS4: NLP

Problem Statement: Develop a Text-based Geolocation Extraction system to extract the geographical location or origin of given text content. The goal is to associate textual data, such as social media posts or news articles, with specific geographic locations, ultimately facilitating applications in content recommendation and regional linguistic analysis.

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Background: In an era where vast amounts of textual data are generated daily, associating this data with geographic locations has significant implications. The Text-based Geolocation

Extraction system aims to enhance content recommendation and provide insights into regional linguistic variations. The extracted geolocation information can be visually represented on a map for a comprehensive understanding.

PS5: Generative AI

Problem Statement: Content creators often struggle with optimizing their content for discoverability and engagement. Identifying relevant keywords and generating trending hashtags can be time-consuming and challenging. This problem statement aims to address these issues by developing a user-friendly tool that combines an accurate Keyword Extraction Module with a GenAI-Powered Hashtag Generator to streamline the content creation process.

Objective: The main objective is to empower content creators with a tool that quickly extracts essential keywords from their content and generates trending hashtags using Genetic Artificial Intelligence (GenAI). This tool aims to enhance content visibility on social media platforms by aligning keywords and hashtags with current trends and user preferences.

Background: Content creators need efficient solutions for keyword extraction and hashtag generation to optimize their content for social media platforms. By integrating GenAI, the tool aims to provide dynamic and contextually relevant hashtags, ensuring that the content remains in tune with the latest trends

The Datathon unfolded in two rounds on the Unstop platform. The initial shortlisting process was based on resumes, and it was succeeded by a quiz conducted on the same platform on 5th

February 2024. The teams' performance in the quiz round determined their preference for the assigned problem statements.

The problem statements were allotted a day before the Datathon on 5th February 2024.Teams were sent their respective problem statements via email and informed thorough WhatsApp messaging platform by the InIT.AI team.

On 6th February 2024, the shortlisted teams reported at 8:00 am at the seminar hall followed by an enlightening seminar on abroad education by our sponsor , Golden Oriole Education. The rules and entire flow of the Datathon was informed to the teams followed by the start of the coding rounds at sharp 9:30am on 6th floor.

The teams worked vigorously to procure a solution. Highly experienced mentors were present, who guided participants during the mentoring session and whenever doubts arose. The labs were filled with energy and healthy competition all around, as the teams strived to incorporate the inputs given by the mentors into their solutions. A judging round was carried at 12:00pm by the expert mentors of Dextra Labs and senior InIT mentors. The coding round continued till 4:00 PM, after which the teams were asked to stop coding and submit their solutions to be considered for the final round.

Inauguration of the event

Datathon in the flow

The first judging round commenced at 5:00 PM, and the judges shortlisted 11 teams after reviewing their solutions. These 11 teams were then asked to present their solutions in front of all the judges in the Seminar Hall. Based on their presentations, the top 3 teams were declared as the winners. Also best PS winners were declared for every problem statement.

Computer Vision:

Team name: Matplotliberals

Members: Vikas Rajpurohit,Amey Agarwal,Mohit Agarwal

Data Science:

Team name: Hello Brothers

Members:Vikas Rajpurohit

NLP:

Team name: Shivam Mustereya

Members: Shivam Mustereya,Aditi Gaikwad,Vaibhav Vanage

MLOps:

Team name: Git Commit

Members: Rachit Gala,Sara Kore,Mahek Jain

GenAI

Team name: Jhenil Parihaar1109

Members: Jhenil Parihaar,Rupesh Raut,Deep Parekh

The overall winners were:

1st prize:

Team name: Gilmore Girls

Members: Shubh Gupta , Sanika Tiwarekar , Gargi Kadam

2nd prize:

Team name: Saniyaabshetty

Members: Saniyaa Shetty, Anish Shetty

3rd prize:

Team name: Noname.csv

Members: Jasleen Gill , Krishi Jain , Shivam Sheth

The event successfully concluded at 8:30 pm with the closing ceremony. Felicitation was done by The Head of the IT department Dr. Vinaya Sawant along with our faculty incharge Prof. Prachi Tawde. All in all it was a great learning experience for every candidate, whether a beginner or expert. DJ InIT.AI hopes to conduct more such events and garner students interest in the artificial intelligence domain.

Committee of DJ INIT.AI

Program Outcomes mapped

PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	P10	P11	P12
1	1			1	1	1					1

Program Specific Outcomes mapped

PSO1	PSO2	PSO3	PSO4
1	1		1

Attendance of Event:

Nihar Nandoskar	60003210200	I102	TE - IT - I2
Palak Shah	60003210217	I118	TE - IT - I2
Darsh Shah	60003210215	I116	TE - IT - I2
Vedant Chavan	60003210164	I069	TE - IT - I2
Vaishnavi Kadukar	60003210170	I074	TE - IT - I2
Rushikesh Gadewar	60003210171	I075	TE - IT - I2
Shivani Patel	60003210187	I090	TE - IT - I2
Enrique Dcosta	60003210194	I096	TE - IT - I2
Nemin Sheth	60003210214	I115	TE - IT - I2
Nishan Chitalia	60003210081	I026	TE - IT - I1
Heet Nanhua	60003210115	I042	TE - IT - I1
Kelly Mistry	60003210185	I088	TE - IT - I2
Isha Mistry	60003210197	I099	TE - IT - I2
Aqaish Shaikh	60003210173	I077	TE - IT - I2
Ayush H Palkar	60003230318	I211	SE - IT - I3
Sagar Bharat Hansra	60003220074	I139	SE - IT - I3
Soham Vishal Patel	60003220225	I162	SE - IT - I3
Anurag Lade	60003210206	I108	TE - IT - I2
Keyur Parmar	60003210219	I120	TE - IT - I2
RONAK Jhaveri	60003210210	I111	TE - IT - I2
Mahek Jain	60003210122	I046	TE - IT - I1
Saea Kore	60003210155	I060	TE - IT - I1
Rachit Gala	60003210039	I006	TE - IT - I1
Priyanka Nair	60003210083	I027	TE - IT - I1
Swapnil Oza	60003210099	I034	TE - IT - I1
Ronak Rajput	60003210114	I041	TE - IT - I1
Darsh Shah	60003210080	I025	TE - IT - I1
Kriya Parmar	60003220165	I079	SE - IT - I2
Lakshitha Chellaraman	60003220197	I084	SE - IT - I2

Shriyaa B Shetty	60003220295	2nd year	IT3	
Anish Shetty	60003220210	I012	S.E.	IT-1
Shraddha Hariyan	60003220190	I168	S.E	IT3
Sawan Halder	60003220087	I147	S.E	IT3
Sriruth reddy	60003220204	I165	S.E	IT3
Priyanka Ramachandran	60003210156	I61	TE	IT-1
Aditya Surve	60003210159	I64	TE	IT-1
Rahul Chougule	60003210167	I072	TE	IT-2
Varad Nath	60003210166	I071	TE	IT-2
Vaishnavi Nath	60003210248	I137	TE	IT-2
Rupesh Raut	60003220103	I132	TE	IT-1
Deep Parekh	60003220267	I139	TE	IT-2
Jheel Gachar	60003220278	I140	TE	IT-2
Bhavya Zaveri	60003220203	I038	TE	IT-1
Harguin Singh Chandhok	60003210174	I078	TE - IT - I2	
Gautam Soni	60003210175	I079	TE - IT - I2	
Soham Thatte	60003210145	I097	TE - IT - I2	

H. Website

The new redesigned club website is hosted on the Netlify platform.

Upon loading the website, we see a visually appealing layout designed to capture visitors' attention. The website may have a navigation menu or sidebar that allows users to explore different sections or pages.

The homepage provides an introduction or overview of the club and the members behind the website. It includes a brief description, background information, and some images or multimedia elements related to the project.

There are various sections or pages dedicated to different topics or aspects. These include sections such as "About," "Projects," "Blog," "Contact,"Achievments" and others, which allow visitors to learn more about the project's goals, past work, or ongoing updates.

The "Projects" section showcases previous works or ongoing initiatives. The "Achievment" section shows the awards and the achievements of the team members.

Additionally, there is a blog section where all the articles, thoughts, or updates related to the clubs work and area of expertise. This section allows visitors to engage with the content, leave comments, or share articles on social media.

Also a new section showcasing the all the team members photo along with their linkedin profile is added.

Furthermore, there is a "Contact" page or section with contact information, such as an email address and a contact form, allowing visitors to get in touch with the website owner or project team.