AI Based Platform For Students(Chat Support And Ai Attendance) Using NLP And K-N-N Machine Learning Algorithm

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Abstract- *AI grounded platform or conversational interfaces as they're also known, present a new way for individualities to interact with computer systems. The technology at the core of the rise of the ai grounded attendance and converse suppport is using for natural language processing(" NLP "). Recent advances in machine literacy have greatly bettered the delicacy and effectiveness of natural language processing, making ai platform feasible option for numerous associations. The functionality of the chatbot can be bettered by integrating it into the association's pupil software, allowing further particular questions to be answered, like " What's my name? ", or " Please shown my attendance report ". In these design using for knot js and Jason using for collect the training data set and testing data set using for make the chatbot. utmost marketable chatbots are dependent on platforms created by the technology titans for their natural language processing. client complaint its constantly response from the association. NLU classifiers make natural language understanding classifiers usingBrain.js, Tensorflow,NLP.js neural network. The real ideal of the course is to learn the generalities behind a Conversational AI, and use them to make a chatbot. We'll learn how to make our chatbot, make it multi-language, test it through press, and eventually how to expose it with a web support.*

Keywords- AI platform , AI chat support, AI attendance.

I. INTRODUCTION

AI chat support is the best way to communicate human and bot interaction. Ai attendance helps for identify collect the large number of dataset and recognize the predict the face immediately.

In this paper ai chat support and ai based face recognition. Using nlp and machine learning algorithm. Artificial intelligence ruling our world, current converse gpt does residency numerous of them works. Artificial Intelligence are now replacing mortal responses with this software. In my design nlp algorithm using for ai converse support and machine literacy algorithm for face recoginiton attendance for pupil platform. In these paper nlp algorithm collect the training dataset of pupil queries related for course, attendance, academic workshop. Nlp algorithm works for crucial words of the queries it'll be access and bot response the communication. The platform has the implicit to ameliorate the effectiveness of educational institutions and enhance the literacy experience of scholars. Our thing of the platform it'll be organized all the institution where connected through the platform.(1) Agrawal,S., Khatri, P et al proposed the facial expression discovery in a variety of operations, including emotion recognition, facial biometrics, and mortal- computer commerce. The author using top element analysis algorithm using of descry the facial expressions. In these algorithm using for descry the object using facial expression.(6) Bhaumik Kohli, Tanupriya Choudhury etal. proposed the ai grounded converse bot using *python* programming language. The author using the nlp(natural language processing) algorithm using of these design of these paper. The authors also introduce their proposed platform, which allows for natural language processing(NLP) and machine literacy-grounded chatbot commerce with humans.(2) Ahmedi,A., Nandyal, S at el. The author using image processing and automated attendance system using for these paper. This author using for machine literacy algorithm using for these paper and prognosticate the image processing.(3) Bodhe,V.M., Bhakre,S.M., Ikhar,S.D at el. This author using nlp and machine literacy algorithm using in these design. Machine literacy algorithm using prognosticate the face using face recoginiton of attendance system.(7) Tussanai Parthornratt, Pasd Putthapipat, Dollachart Kitsawat, Prapap Koronjaruwat at el. In these paper using IOT grounded facebook chatbot using nlp algorithm. The author using for python for produce mortal chatbot.

II. RELATED WORK

Agrawal and Khatri. [1] ,The paper begins by introducing the importance of facial expression detection in a variety of applications, including emotion recognition, facial

biometrics, and human-computer interaction. The authors then discuss the two primary techniques for facial expression detection that are used in the paper: the Viola and Jones algorithm and principal component analysis (PCA).The Viola and Jones algorithm is a popular object detection algorithm that uses Haar-like features to detect objects in an image. This algorithm is used in the paper to detect facial features and analyze facial expressions. The authors provide a detailed explanation of how the algorithm works and how it can be used to detect facial expressions. They also discuss the strengths and weaknesses of the Viola and Jones algorithm, including its speed and accuracy.

Ahmedi and Nandyal[2], The paper describes the development of an automatic attendance system that uses image processing techniques.The paper begins by discussing the importance of attendance tracking in educational settings and the limitations of traditional methods, such as paper-based attendance sheets. The authors then introduce their proposed system, which uses a camera to capture images of students as they enter a classroom. The images are processed using image processing techniques to identify individual students and track their attendance.The paper provides a detailed explanation of the image processing techniques used in the system, including face detection, feature extraction, and recognition. The authors explain how the system uses these techniques to identify individual students and track their attendance..

Bodhe, Bhakre, and Ikhar [3], The paper presents a student attendance system that uses face detection technology.The paper begins by discussing the importance of attendance tracking in educational institutions and the limitations of traditional methods, such as paper-based attendance sheets. The authors then introduce their proposed system, which uses a camera to capture images of students as they enter a classroom. The images are processed using face detection technology to identify individual students and track their attendance.

D'Silva, Shanbhag, Chaudhari, and Patil[4], The paper presents a smart attendance system that uses face recognition technology.The paper begins by discussing the limitations of traditional attendance tracking methods and the advantages of using face recognition technology. The authors then introduce their proposed system, which consists of a camera, a microcontroller, and a database. The camera captures images of students as they enter a classroom, and the microcontroller processes the images using face recognition technology to identify individual students and track their attendance. The attendance data is stored in a database, which can be accessed by instructors and administrators.

Lawrence, Giles, Tsoi, and Back[5], The paper presents a novel approach to face recognition using convolutional neural networks (CNNs).The paper begins by discussing the limitations of traditional approaches to face recognition, which often rely on manual feature extraction and have limited accuracy. The authors then introduce their proposed approach, which uses CNNs to automatically extract features from facial images and identify individual faces.The paper provides a detailed explanation of the CNN architecture used in the system, including the use of convolutional and subsampling layers to extract and reduce features. The authors explain how the system is trained using a large dataset of facial images and how it can be used to recognize individual faces in real-time.

Bhaumik Kohli, Tanupriya Choudhury, Shilpi Sharma, and Praveen Kumar[6], The paper presents a platform for human-chatbot interaction using the Python programming language.The paper begins by discussing the growing popularity of chatbots and their potential applications in various fields. The authors then introduce their proposed platform, which allows for natural language processing (NLP) and machine learning-based chatbot interaction with humans.

Tussanai Parthornratt, Pasd Putthapipat, Dollachart Kitsawat, and Prapap Koronjaruwat[7], The paper presents a smart home automation system that utilizes a Facebook chatbot and a Raspberry Pi.The authors begin by discussing the increasing popularity of smart home automation systems and their potential benefits for homeowners. They then introduce their proposed system, which allows users to control various home appliances and devices through a chatbot interface on Facebook.The system uses a Raspberry Pi as the central hub to communicate with the chatbot and the home appliances. The authors provide a detailed explanation of the system architecture, including the use of Python-based tools and libraries such as Flask, Requests, and RPi.GPIO.

Parth Thosani, Manas Sinkar, Jaydeep Vaghasiya, and Radha Shankarmani[8], The paper proposes a self-learning chatbot that can improve its responses to user queries based on the interactions and preferences of the users.The authors begin by discussing the growing popularity of chatbots and the challenges in building a chatbot that can effectively communicate with users. They then introduce their proposed chatbot, which uses a combination of machine learning algorithms and natural language processing techniques to provide personalized responses to user queries.The chatbot is designed to learn from the user's interactions and preferences to improve its responses over time. The authors provide a detailed explanation of the system architecture, which includes the use of Python-based libraries such as NLTK and TensorFlow.

Prakhar Srivastava and Nishant Singh[9], The paper proposes a chatbot system that can help people in need of medical consultation by providing them with personalized health-related information and advice.The authors begin by discussing the growing need for an efficient and affordable healthcare system that can cater to the needs of people in remote or underprivileged areas. They then introduce their proposed chatbot, called Medibot, which uses machine learning and natural language processing techniques to provide personalized healthcare advice to users.

Jitendra Purohi, Aditya Bagwe, Rishbh Mehta, Ojaswini Mangaonkar, and Elizabeth George[10], The paper proposes a chatbot system that can conduct job interviews using natural language processing techniques.The authors begin by discussing the challenges faced by companies in conducting job interviews, including the need for human resources and the time-consuming nature of the process.

III. THEORY

The proposition of AI- grounded chatbots involves the use of artificial intelligence to produce chatbots that can interact with druggies in a mortal- suchlike manner. These chatbots are designed to understand natural language and respond to stoner queries and requests in a way that's analogous to how a human would respond. One common approach to erecting AI- grounded chatbots is through the use of natural language processing(NLP) ways. NLP involves tutoring a computer to understand and dissect mortal language, including alphabet, syntax, and environment.

The proposition of AI- grounded face recognition attendance involves the use of artificial intelligence to fete and record the attendance of individualities grounded on their facial features. This technology is generally used in workplaces, educational institutions, and other settings where attendance tracking is important.

There are many existing ai chatbots that are used in varies industries and application. Customer service chatbots and personal chatbots, financial bots and health care bots these are using for many platforms. In my project educational related chat support for students. There are many existing ai face recognition system that are used in various industries like security and surveillance using for identify the people movements using face recognition. In my project face recognition based attendance system for student attendance tracking system.

A proposed ai chatbot system for students are personalized learning system experiences for students by analyzing their strengths and weaknesses and providing customized study plans. The chatbot 24/7 to answer students question and provide support for student. The chatbot could use nlp to understand students questions and provide accurate.

A proposed ai face recognition attendance system automatically track attendance using ai face recognition technology, eliminating the manual attendances. The real time monitoring of attendance for students its identify the students face recognition. The system could provide analytics and reporting on attendance. If takes recognition the face the data will be saved and record generates excel for the administrative purpose.

A 1.   Research Methodology

The first step in developing an AI-based platform for students is to identify the problem that needs to be solved. This could be related to academic performance. The next step is to collect data related to the problem. This may involve surveying students, analyzing academic records, or collecting data from other sources such as social media. Once the data has been collected, it must be preprocessed to ensure that it is clean and relevant. This may involve removing irrelevant data, filling in missing data, and normalizing the data to ensure that it is consistent. The next step is to develop an AI model that can analyze the data and provide insights or recommendations. This may involve using machine learning techniques such as regression, classification, or clustering. Using nlp and nlg algorithm using for student chat support and machine learning algorithm using for face recognition algorithm implements ai based attendance for students. Analyze the data from the given data from the data set. Predict the result from the chatbot and recognize face from attendance.
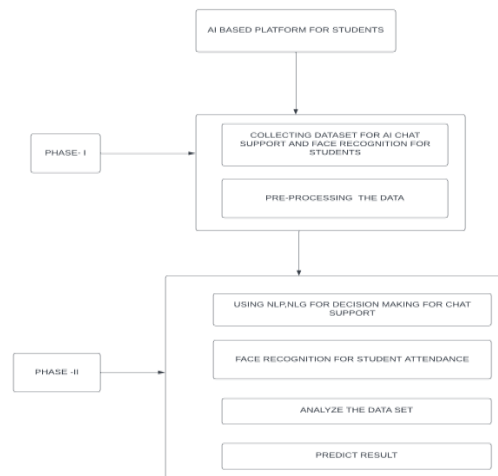
Research Methodology

A 2.   Algorithm Implementation

Implementing an algorithm for an AI-based chatbot for students involves developing a natural language processing (NLP) model that can understand and respond to student questions and concerns in a helpful and appropriate way.

Implementing an algorithm for an AI-based face recognition attendance system for students involves developing a computer vision and machine learning model that can accurately and reliably recognize students' faces and track their attendance over time.

IV. EXPERIMENTS AND RESULTS

A 1.   *Simulation Environment*

Python IDLE (Integrated Development and Learning Environment) is an Integrated Development Environment (IDE) that comes pre-installed with Python. It provides a convenient environment for developers to write, test, and debug Python code.Python IDLE has a simple user interface with an interactive Python shell, which allows developers to execute Python code and see the output immediately. It also provides features such as syntax highlighting, auto-completion, code folding, and debugging tools that make the development process easier. In my project using face api and flask using k-n-n algorithm using for predict the face recognition in the idle platform it will support and faster the process for predict the dataset.
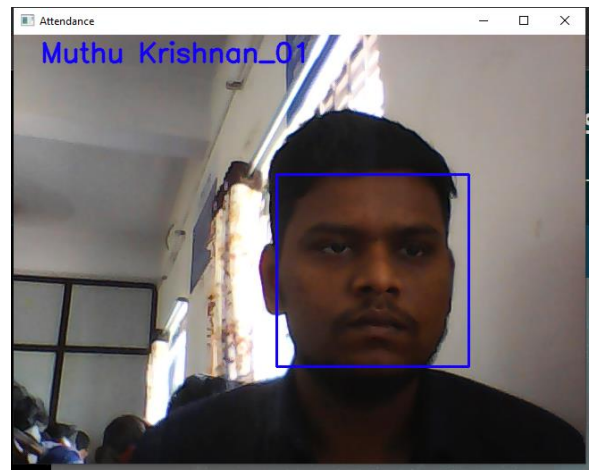
A 2.   *Architecture diagram*
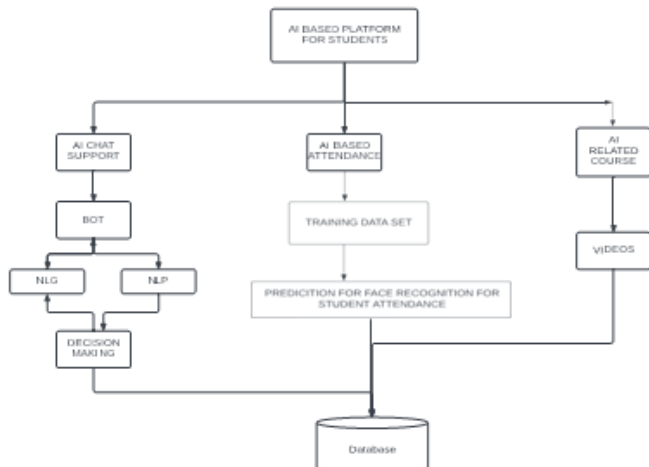
Architecture Diagram

A 3.   *Output Screen*
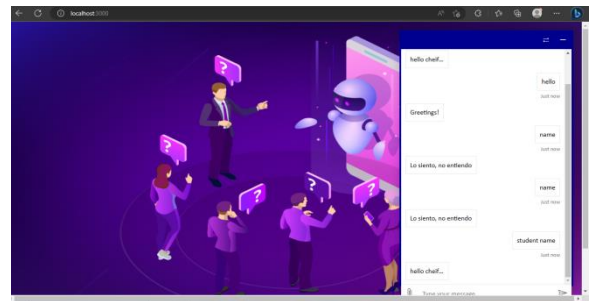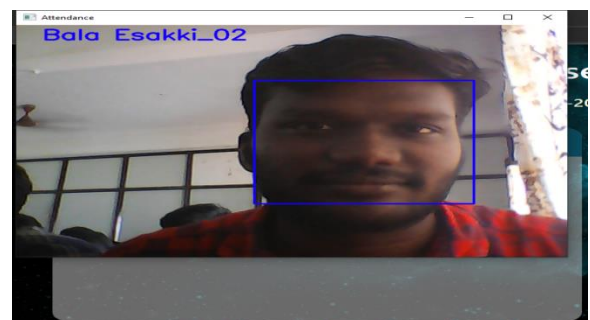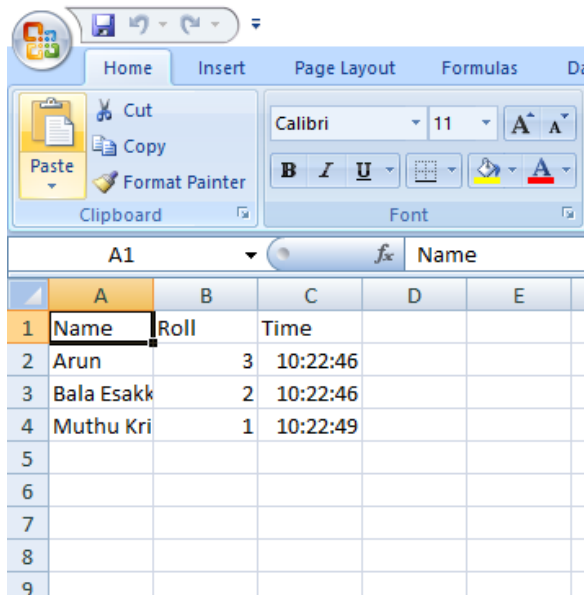

AI chat support

Face identification of student_01

Figure6. Facce identification of student_02

Figure7. Data stored

Performance Metrics

AI based face recognition attendance

The code uses the OpenCV library for face detection and recognition. OpenCV is a highly optimized computer vision library that can efficiently process video frames in real-time.

The code uses the K-Nearest Neighbors (KNN) algorithm for face recognition. KNN is a simple and fast algorithm that can be trained on a small dataset of faces. However, it may not perform well on large datasets or when the faces are not well-separated in the feature space.

The code saves the attendance data in a CSV file. CSV files are easy to use but can become slow to read and write when the file size grows. A more efficient way to store attendance data would be to use a database.

The code uses the Flask framework to build a web application. Flask is a lightweight and easy-to-use web framework, but it may not be suitable for high-traffic web applications. For larger projects, a more scalable framework like Django or FastAPI may be more appropriate.*:*
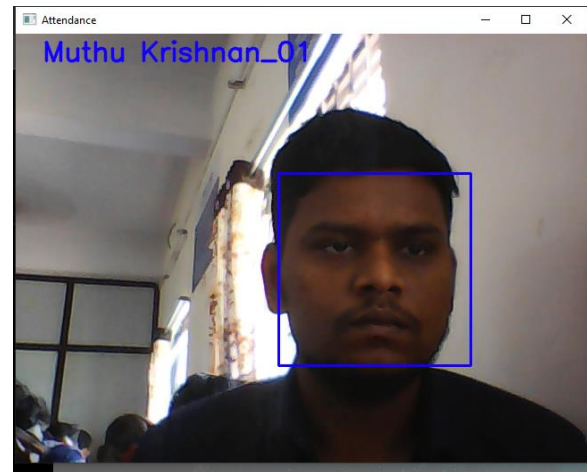
In these project using fast api to predict the immediate result of the face prediction. The performance of the face recogniton some of the dark faces it predict some error. 70% of face it will accurate predict .
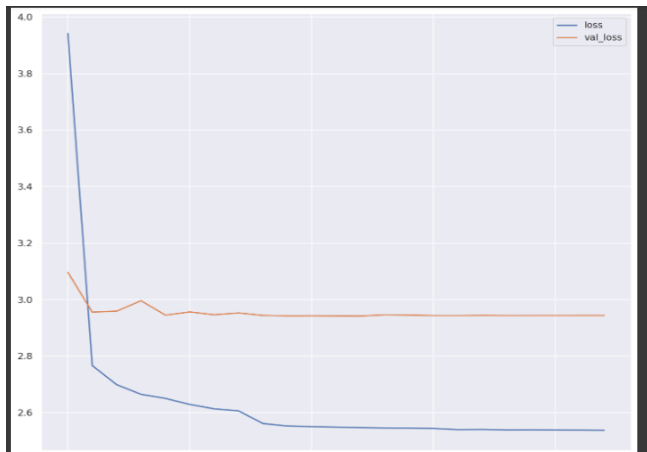
AI based chat support for students:

AI chatbots can be evaluated based on several factors such as accuracy, response time, conversational quality, user satisfaction, and scalability.

Accuracy refers to the ability of the chatbot to provide correct and relevant responses to user queries. Response time measures the speed at which the bot can generate a response. Conversational quality is the measure of how well the chatbot can engage in a human-like conversation. User satisfaction is the measure of how satisfied the user is with the chatbot's performance. Finally, scalability refers to the ability of the chatbot to handle a large number of users simultaneously.

To evaluate the performance of an AI chatbot, a number of tests can be conducted. For example, the chatbot can be tested against a dataset of questions and answers to determine its accuracy. Response time can be measured by recording the time it takes the bot to generate a response to a user query. Conversational quality can be evaluated through user surveys or through a panel of human evaluators who can judge the bot's conversational abilities. User satisfaction can be measured through surveys and feedback forms. Finally, scalability can be tested by simulating a large number of users and evaluating the chatbot's ability to handle them.

Overall, the performance of an AI chatbot can be improved through continuous training and testing, as well as through the use of advanced machine learning algorithms and natural language processing techniques.

AI chatbot for support
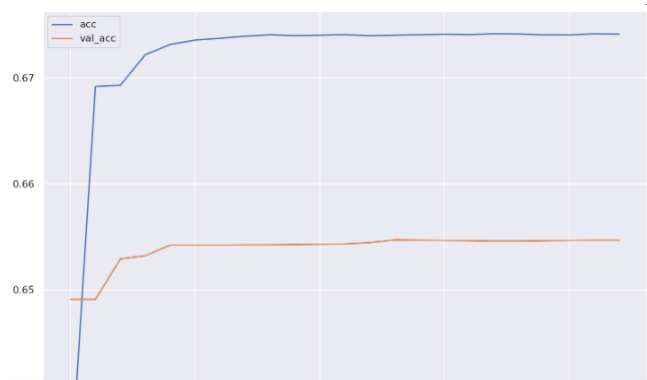
Ai chat supoort predict

V. DISCUSSION AND CONCLUSION

In conclusion, an AI-based chat support for students can be a powerful tool for improving student engagement and learning outcomes. By providing personalized and interactive support, an AI chatbot can help students overcome challenges and improve their academic performance. The development and deployment of an AI-based chatbot for students requires careful consideration of various factors, including data privacy and security, NLP capabilities, machine learning models, and the working environment. AI-based chatbot has the potential to revolutionize the way students learn and interact with educational institutions.

In conclusion, an AI-based face recognition attendance system can be a powerful tool for improving attendance management in schools and educational institutions. By automating attendance tracking and reducing the administrative burden on teachers and staff, an AI-based face recognition attendance system can help improve overall efficiency and accuracy. AI-based face recognition attendance system has the potential to revolutionize the way attendance is managed in educational institutions. As technology advances

and becomes more accessible, we can expect to see even more innovative solutions emerge in this space, improving the overall learning experience for students.
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VI. FUTURE SCOPE

There are several potential future enhancements for AI chatbots for students that could improve their effectiveness and functionality. Allowing for multimodal interactions, such as voice and gesture recognition, could provide students with a more intuitive and natural way to interact with the chatbot. Implementing machine learning algorithms to continuously learn and improve the chatbot's performance could ensure that it is always up-to-date and effective in addressing student needs.

AI face recognition attendance systems for students that could improve their effectiveness and functionality. Advancements in facial recognition technology and machine learning algorithms could lead to more accurate and reliable attendance tracking. Implementing real-time monitoring and alerts could provide teachers with immediate notification of student attendance and allow them to intervene as necessary. AI face recognition attendance systems even more effective in improving student attendance and engagement. As technology continues to evolve, we can expect to see even more innovative solutions emerge in this space

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