

**a) Title of the Project:**

Implementation Of Voice Based Control and Detection Of Currency In Atm Transaction.

**b) Name of the College and Department:**

Sai Vidya Institute of Technology, Bangalore and Department of Computer Science Engineering.

**c) Name Of the Students and Guide with Email Id and Cell Phone Number:**

Students:

Name: Liyakhat Intiyaz Ali

Email Id: [liyakhaticmiyazali.19cs@saividya.ac.in](mailto:liyakhaticmiyazali.19cs@saividya.ac.in)

Phone:7338224378

Name: Raqeeb Ahmad Bhat

Email Id: [raqeebahmadbhat.19cs@saividya.ac.in](mailto:raqeebahmadbhat.19cs@saividya.ac.in)

Phone: 7889342767

Name: Rohankote R

Email Id: [rohankoter.19cs@saividya.ac.in](mailto:rohankoter.19cs@saividya.ac.in)

Phone:8431026619

Name: Fatima Intiyaz

Email Id: [fatimaimtiyaz.19cs@saividya.ac.in](mailto:fatimaimtiyaz.19cs@saividya.ac.in)

Phone: 6005345808

## Guides:

Name: Dr. Shantakumar B Patil

Email Id: [shantakumar.bpatil@saividya.ac.in](mailto:shantakumar.bpatil@saividya.ac.in)

Phone: 9448259327

Name: Dr. Tejashwini N

Email Id: [tejashwini.n@saividya.ac.in](mailto:tejashwini.n@saividya.ac.in)

Phone: 9972736616

### **d) Keywords:**

Automated Teller Machines (ATMs),

Voice recognition technology, Currency

denominations, Security, Transactions, Speech recognition.

### **e) Introduction:**

Automated Teller Machines (ATMs) play a crucial role in modern banking systems. However, the user interface of traditional ATMs primarily involves a touch screen and physical buttons for interaction. To improve the ATM user experience and enhance security, we propose a novel approach that utilizes voice recognition technology for user control and currency denomination detection during transactions. Our project involves developing a software interface that employs speech recognition algorithms and machine learning models to detect user commands and currency denominations. This system is designed to be compatible with existing ATM hardware, ensuring seamless integration into current banking systems. Overall, the implementation of a voice-based control and detection system for ATMs has the potential to revolutionize the ATM experience for users and increase security in the ATM environment. The aim of

the project is to make a transaction system smooth for the disabled person. Additionally, we try to secure the transaction system in India with digital menus. Currently the RBI is moving towards the concept of tokenization and virtual debit and credit card this becomes one of the challenging issues for the disabled persons to perform the transaction.

### **f) Objective:**

The main objective of the project is to enable a secure platform for visually impaired to perform the transaction easily.

The objective of Voice-based Control and Detection of the Currency in ATM Transaction is to develop a system that combines voice-based control and advanced currency detection techniques to improve the security and efficiency of ATM transactions.

### **g) Methodology:**

We try to implement image processing to capture the disabled persons image as input message which will be further analysed by the machine algorithm to allow the authenticity of the person. After authenticity the complete voice control system will help the individual to perform transaction operation end to end. The output of the application resembles the real time applications of ATM but with more transactions, the input required for this mechanism may be in a textual as well as in speech form. The output of the application is audio based and GUI based. The mainly focused technologies are Google Assistant, speech to text and text to speech conversion. To enhance security, Image Processing and Machine Learning algorithm Brute force algorithm and KNN algorithm are used. As we

will be designing the prototype, we would require database to store customer details. Complete application can be designed in Python.

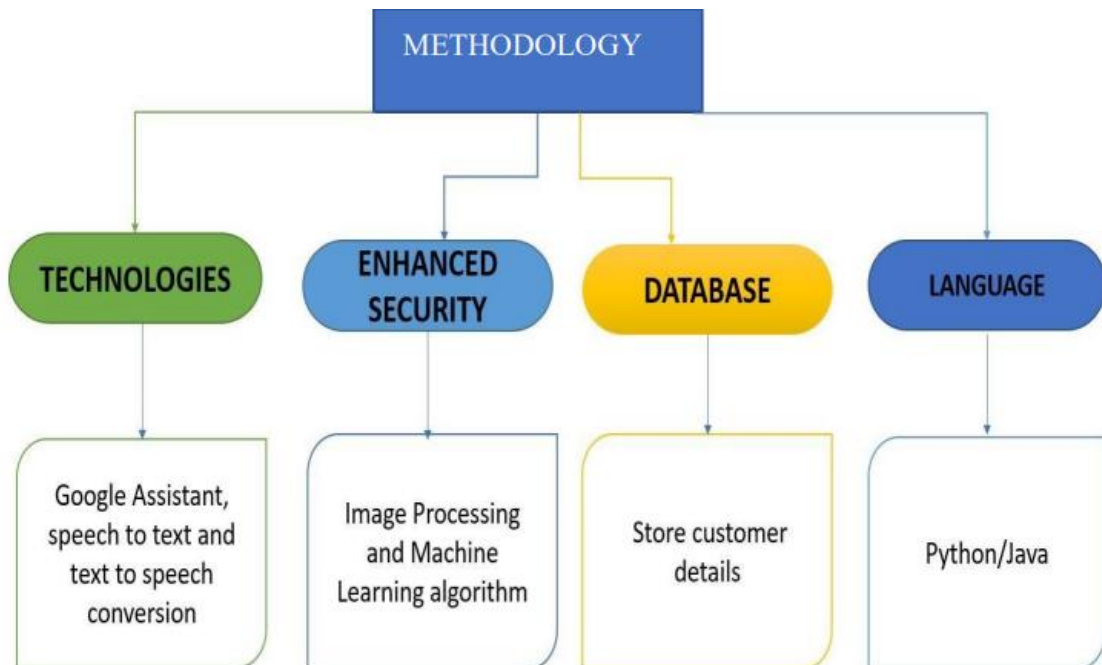


Fig. Methodology

## h) Results and Conclusions

**Test Case 1: Voice Input Recognition Description:** Verify that the system accurately recognizes and interprets voice inputs from the visually impaired user. **Test Steps:** Enter different transaction amounts using voice input.

**Expected Result:** The system correctly captures and displays the entered amounts.

**Test Case 2: Voice Output Confirmation Description:** Confirm that the system produces voice output to verify the displayed amount. **Test Steps:** Enter a transaction amount using voice input.

Expected Result: Listen to the voice output and verify that it accurately confirms the displayed amount.

### **Conclusion:**

Our proposed system enables the secure platform for the visually impaired people to perform ATM Transaction operation and currency detection using text to speech, speech to text, image processing and others. The system has the ability to provide a complete aid and support the visually challenged people to perform the transaction process without the help of any third person or strangers. Thus, the security and accuracy of the transaction process is ensured. The further development can be done in terms of the algorithms used and the process implementation. With the increasing number of algorithms day to day, there is much scope in increasing the complexity and the quality of the system. Also, it is possible to increase the dataset content so as to ensure accuracy and also scalability by using the system to classify various widespread banknotes.

### **i) What is the Innovation of the Project?**

The implementation of voice-based control and detection of currency in ATM transactions represents an innovative approach to enhance the accessibility and security of automated teller machines. Here's an overview of the key innovations involved:

**Voice-Based Control:** Traditionally, ATMs have relied on physical buttons and touch screens for user input. However, with voice-based control, users can interact with the ATM using voice commands. This innovation enables a more intuitive and hands-free user experience,

particularly benefiting individuals with visual impairments or those who may have difficulty using traditional input methods.

**Speech Recognition:** The implementation involves sophisticated speech recognition technology to accurately interpret and process user voice commands.

**Currency Detection:** In addition to voice-based control, the innovation also incorporates currency detection capabilities. Integrated camera or similar technology are employed within the ATM to identify the denomination of the currency notes being withdrawn. This detection mechanism ensures the accuracy of transactions.

**Security Measures:** To maintain security, the voice-based control system incorporates robust authentication mechanisms. This may involve capturing image of the user to verify their identity.

## **j) Scope for future work**

- **Enhanced Accessibility:** To further enhance accessibility, the system can be expanded to accommodate individuals with other disabilities, such as hearing impairments. This can be achieved by incorporating sign language recognition or alternative output methods like vibration feedback, ensuring a more inclusive user experience.
- **Multilingual Support:** Developing language models and OCR engines to support multiple languages would enable users to interact with the system in their preferred language. This enhancement would cater to a diverse user base and enhance usability for individuals who are more comfortable using languages other than the system's default language.

- Advanced Security Measures: Implementing additional security measures is crucial to protect user transactions and personal information. Integration of biometric authentication methods, such as voice recognition or fingerprint scanning, can enhance the system's security.