**FEASIBILITY STUDY REPORT**

**Executive Summary**

The stakeholders for the proposed project are :

* Course instructor and college management
* End users of the application : people who are hearing impaired or speech impaired

**Business Profile**

Company name:

Type of business: developing machine learning based applications

Main services: Image based machine learning applications

Business objective: creating machine learning based applications to improve lives

Current staff : students of IIIT Dharwad – Avaneesh Sundararajan , Ankush Ganiyar

Main customers: organisations in need of automating services using Machine learning or deep learning

**Problems in existing systems**

Not many such systems exist in the market as of today , the few that do are unreliable in translation and therefore lead to miscommunication . These few are also not easily available to all.

**Project Scope**

Creating a user friendly GUI application for hand signs to text conversion , while assuring reliability and availability at an affordable price within the time frame of 4 months allotted for proposed project .

**Methodology Used**

* ***Brain storming***
* *Expectation of the system-* fast and accurate translation of the sign language to text
* *Organisation rules-* on time delivery, high success rate, efficient communication with stakeholders
* *Current option available-* none
* *How to solve the issue-* use real time hand gesture identification by using python and AI modules to decrypt the language into text
* ***Interface analysis***
* *Type of data exchanged:* - visual data will be converted into text
* *When will the data be exchanged: -* the data exchange will be in real time
* *How to implement the interface: -* using python and AI models
* *Need of the interface: -* for ease in usability and convenience

**Observations of the feasibility study**

**Problem Statement**

Most of hearing or speech impaired people in today’s world need to rely on someone else to accompany them in order to translate their needs effectively , as the present systems available in the market are unavailable or inaccessible to all.

**Market research**

The application proposed will have a big impact on those who are hearing or speech impaired as it will allow them to become more self sufficient and not rely on others .

Our target market is people who are hearing or speech impaired .

**Technical feasibility**

We would need to create a GUI application using that allows for users to access a camera for live video processing of the hand signs . once processed the application will then generate the equivalent ‘English’ text which portrays the same intended meaning.

After evaluating the technologies available , we have determined that it is feasible to create the entire application using python and the machine learning modules that comes along with it .

**Economic feasibility**

The cost of this project is 2 million dollars . from the ‘cost benefit analysis’ conducted by us ,we have determined that potential users of our application are willing to pay a small premium for using the application and hence we will be able to generate revenue from this .

Also by allowing for advertising on our application we can generate ad revenue . combining the revenue streams our analysis suggests that we will not only cover the project costs but also see a reasonable return on investment after a period of 4-5 years.

**Operational feasibility**

The project would need the team members to be proficient in project building and management skills along with the skills needed to create the application , such as good understanding in deep learning and computer vision and how to build GUI applications with python.

We have analysed the above requirements and have concluded that the team members possess the required skill set to proceed with the project . The team members have no prior obligations to any other project and are willing to undertake the proposed project .

The successful completion of the proposed project will bring good publicity for the organisation and hence will attract a bigger customer base for future projects thereby aligning with the organisation’s goals.

**Legal feasibility**

The purpose the application for hand sign recognition and translation into text system will comply with all the relevant regulations regarding the data privacy and security. the system will have strict security measures and will not be storing any images / videos that the application captures during the usage of the program .no translation will be done with out the consent of the using party, and we will try to keep the translation such that no personal sentiments are hurt because of translation error.

**Schedule feasibility**

The estimated time for the project completion is 4 months. We have a team of skilled developers and designers assigned to work on the project . we will be conducting regular testing of the product to optimise the success rate of translation, by real time testing and user feedback throughout the developing process

**Challenges considered**

* Multiple ‘hands’ in frame while the application is processing the live video
* No ‘universal ‘ sign language

**Assumptions considered**

* Sign language used in India
* Maximum 2 hands in frame while application is processing the live video.

**TEAM NAME:**

**TEAM MEMBERS:**

* **Ankush Ganiyar (21BCS012)**
* **Avaneesh Sundararajan (21BCS020)**

**REFERENCES:**