SYNOPSIS

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| 1. | **Title of**  **the Project** | SIGN-LANGUAGE VIDEO CALL  Project Reference No.: 46S\_BE\_0222 |
| 2. | **College and Department** | Sahyadri College of Engineering & Management, Mangalore-575007 (Computer Science and Engineering) |
| 3. | **Name of the Students and Guide** | Karthik Nagaraj Naik [karthiknn.cs20@sahyadri.edu.in](mailto:karthiknn.cs20@sahyadri.edu.in)  R Adithya Iyer [radithya.cs20@sahyadri.edu.in](mailto:radithya.cs20@sahyadri.edu.in)  Prakhyath K S [prakyathks.cs20@sahyadri.edu.in](mailto:prakyathks.cs20@sahyadri.edu.in)  Sampreeti sampreeti.cs20@sahyadri.edu.in  Mrs. Shiji Abraham (Guide) [kishor.cs@sahyadri.edu.in](mailto:kishor.cs@sahyadri.edu.in) |
| 4. | **Keywords** | Deaf users, Convolutional Neural Networks, Spontaneous American Gesture Recognition, Communication |
| 5. | **Introduction** | In an increasingly digital world, our project, "Sign Language Video Call," emerges as a solution to bridge the communication gap for individuals with hearing impairments. This innovative web platform leverages Convolutional Neural Networks (CNN) and Spontaneous American Gesture Recognition models to enable deaf users to convey sign language via webcam, translating gestures into coherent sentences for the recipient. Non-deaf users can seamlessly toggle between text-to-speech and speech-to-text modes, ensuring smooth two-way communication. This project promotes inclusivity and equal access to communication, with standard video and audio features enhancing the user experience. By allowing users to specify their hearing status during registration, we aim to create a more accessible digital world, fostering meaningful connections for all. This article delves into the project's technology, development, and its potential to transform communication for individuals with hearing impairments. |
| 6. | **Objectives** | * The sign language video call website offers a seamless, user-friendly interface for both deaf and non-deaf users. * The system also customizes user experience based on hearing status during registration. * Utilizing cutting-edge technology such as Convolutional Neural Networks (CNN), the system precisely recognizes sign gestures and translates them into coherent sentences, enhancing the effectiveness of communication. * The project's core aim is to foster inclusivity and promote equal access to digital communication for all users, breaking down communication barriers and facilitating meaningful interactions, irrespective of hearing abilities. |

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| 7. | **Methodology** | The methodology for developing the sign language video call project typically involves the following steps:   1. Design the web application 2. Preprocessing the sign language data sets 3. Creating the model 4. Training the model and testing accuracy 5. Interacting with the model through API 6. Integrating and deploying the model |

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| 8. | **Results and Conclusions** | The sign language video call project is designed to enable seamless sign language communication through webcam gestures, with precise recognition using Convolutional Neural Networks (CNN). It provides a user-friendly interface for both deaf and non-deaf users to engage in video calls, fostering inclusivity. Personalization based on hearing status enhances accessibility. By breaking communication barriers, the project aims to connect users effectively, regardless of their hearing abilities, contributing to a more inclusive and accessible digital communication space. |
| 9. | **Scope for Future Work** | * The delay in sign language video call project can be further reduced if provided with higher computation power. * Could include a greater number of sign language dialects. * With the deployment of 5G networks the speed of communication can be increased.   . |