TASK 2

Sign Language Detection Model

I. INTRODUCTION

Communication gaps are filled by sign language for those who are hard of hearing or deaf. By uploading videos or images in sign language, the model assists in predicting sign language and facilitates efficient communication between sign language users and non-users.

II. BACKGROUND

Creating a model that is aware of these subtleties is necessary for efficient communication. The model focuses on turning sign movements into text by applying machine learning techniques.

III. LEARNING OBJECTIVES

- Data collection and annotations
- Learn to preprocess images and videos
- Implement time-based restrictions

IV. ACTIVITIES AND TASKS

- Data collection
- Data preprocessing
- Model development
- Time-based activation

V. SKILLS AND COMPETENCIES

- Deep learning techniques (CNNs)
- Natural Language Processing
- Machine learning libraries (TensorFlow, PyTorch)
- Software development skills
- Time-based Logic Implementation

VI. FEEDBACK AND EVIDENCE

- Model accuracy and performance metrics
- Use techniques like bounding boxes to visualize model predictions

VII. CHALLENGES AND SOLUTIONS

- The challenges faced during processing video sequence in real-time can be resolved by optimizing the model and using efficient video processing techniques
- Collecting diverse dataset of sign language images and videos can be challenging. Collaboration with sign language experts and organizations to collect data

VIII. OUTCOMES AND IMPACT

- Improved communication
- Enhanced social inclusion
- Inclusive Technology

IX. CONCLUSION

In conclusion, the model serves as a tool to bridge the gap between sign language and spoken language and thereby promoting efficient and effective communication. The project's outcomes will have a significant impact on the lives of individuals who are deaf or hard of hearing, and will contribute to a more inclusive and equitable society.