

**Project Initialization and Planning Phase**

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| Date | 21 JULY 2024 |
| Team ID | Team-740025 |
| Project Title | Unlocking Silent Signals :Decoding the Body Language with Mediapipe |
| Maximum Marks | 3 Marks |

**Project Proposal (Proposed Solution) template**

This project proposal outlines a solution to address a specific problem. With a clear objective, defined scope, and a concise problem statement, the proposed solution details the approach, key features, and resource requirements, including hardware, software, and personnel.

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| **Project Overview** |  |
| Objective | To leverage MediaPipe's advanced computer vision technology to accurately decode human body language in real-time, enhancing non-verbal communication understanding across various fields. |
| Scope | This project involves implementing MediaPipe to detect and analyze body movements, collecting and annotating diverse datasets, training machine learning models for accurate body language interpretation, and developing a user-friendly application for real-time use in various scenarios. Extensive testing and user feedback will ensure reliability and continuous improvement. |
| **Problem Statement** |  |
| Description | Despite the critical role of body language in human communication, there is a lack of reliable, real-time tools to interpret these non-verbal cues accurately. Existing solutions are often limited by their complexity and inaccessibility. This project seeks to address this gap by leveraging MediaPipe's technology to create an intuitive system for decoding body language. |
| Impact | This project will enhance real-time non-verbal communication understanding, improving interactions in virtual meetings, therapy, and other fields. It paves the way for advanced human-computer interaction technologies. |
| **Proposed Solution** |  |
| Approach | Utilize MediaPipe to detect and analyze body language in real-time, and train machine learning models on diverse datasets for accurate interpretation and practical application. Develop a user-friendly application for practical use in enhancing non-verbal communication. |



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| Key Features | Real-time body language detection using MediaPipe, accurate interpretation through advanced machine learning models, and a user-friendly application interface for seamless integration into various scenarios. The system also includes customizable settings and feedback mechanisms for enhanced usability. |

**Resource Requirements**

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| **Resource Type** | **Description** | **Specification/Allocation** |
| **Hardware** |  |  |
| Computing Resources | CPU/GPU specifications, number of cores | e.g., 2 x NVIDIA V100 GPUs |
| Memory | RAM specifications | e.g., 8 GB |
| Storage | Disk space for data, models, and logs | e.g., 1 TB SSD |
| **Software** |  |  |
| Frameworks | Python frameworks | e.g., MediaPipe, TensorFlow or PyTorch, OpenCV |
| Libraries | Additional libraries | e.g., scikit-learn, pandas,  numpy |
| Development Environment | IDE, version control | e.g., Jupyter Notebook, Git , Google colab |
| **Data** |  |  |
| Data | Source, size, format | e.g., Git Hub dataset, video data, trianing data , CSV |