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| **Project ID** | **Student Name(s)** | **Registration Number** | **Section (A/B)** | **Instructor Remarks** |
|  | Mayank Chopra | 229309229 | C |  |
|  | Kunal Yadav | 229309237 | C |  |

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| **Finalized Project Title:**  Real-Time Sign Language Translation System | **Evaluation Parameter:**  Accuracy = 92.5% |

1. **Novelty of your work (in 150-200 words bullet points):**

* **Integration of Advanced Computer Vision:** Utilizes state-of-the-art tools like MediaPipe for precise hand landmark extraction and motion tracking, ensuring high accuracy in gesture recognition even in varying environments.
* **Cross-Modal Translation:** Supports real-time conversion of sign language into both text and speech, enhancing communication inclusivity for users with hearing or speech impairments.
* **Scalable and Modular Framework:** Built with a modular architecture that facilitates easy customization, updates, and scalability for various sign languages and deployment scenarios.
* **Integration of Latest Technologies:** Leverages cutting-edge technologies like TensorFlow, PyTorch, and MediaPipe for gesture recognition, ensuring state-of-the-art performance.
* **Contextual Understanding:** Employs deep learning models such as CNNs and RNNs to interpret the temporal and spatial dependencies of gestures, allowing for coherent word or sentence translation.
* **Real-Time Processing Efficiency:** Designed to handle real-time video input with minimal latency, ensuring smooth and natural communication**.**
* **Educational and Practical Value:** Offers a valuable resource for students, educators, and developers to learn and experiment with sign language translation systems.

1. **Comparative study of your results as compared to state of art**

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| S.No | Proposed Work | State-of-the-Art (e.g., DeepSign) | State-of-the-Art (e.g., SignAll) |
| Accuracy (%) | 92.5 | 89.2 | 88.5 |
| Precision (%) | 90.4 | 89 | 88.7 |
| Recall (%) | 91.8 | 89.5 | 88.9 |
| F-1 Score (%) | 91.1 | 89.3 | 88.6 |
| Word Error Rate (WER) | 7.2 | 8.0 | 8.5 |
| Latency (ms) | 120 | 150 | 160 |
| Frames per second (FPS) | 25 | 20 | 22 |