

Test Case	Description	Initial Result
TC1: Dataset Preprocessing	Verify if the KOA-NM dataset is correctly loaded, structured, and split into train, validation, and test sets.	Failed (Some .MOV files were unreadable)
TC2: Dataset Split	Split the dataset in to train and test in ration of 8:2	Passed
TC2: Frame Extraction	Check if video files are correctly converted into frames for analysis.	Failed (Skipped frames, inconsistent FPS)
TC3: Feature Extraction from Frames	Verify if extracted frames contain relevant joint movement information.	Failed (Blurred frames, missing keypoints)
TC4: Pose Estimation	Check if OpenPose/Mediapipe can extract gait features from video input.	Passed
TC5: Model Training	Ensure the CNN-LSTM model successfully trains on the KOA dataset and achieves a minimum of 85% accuracy.	Failed (Accuracy was 78%)
TC7: Model Evaluation	Evaluate the model's performance with the test dataset and observe the perfromance and verify with the training perfromace	Passed
TC6: KOA Classification	Verify if the trained model correctly classifies gait into KOA severity levels.	N/A
TC7: Real-Time Prediction	Check if the model can process and classify a new gait video within 50 seconds.	Passed

Modifications & Fixes	Final Result
<i>Converted .MOV files to .mp4, handled missing/corrupt files</i>	Passed
N/A	Passed
<i>Adjusted frame extraction logic to maintain uniform FPS</i>	Passed
<i>Enhanced preprocessing with noise reduction and keypoint refinement</i>	Passed
N/A	Passed
<i>Tuned hyperparameters, increased training epochs, and added data augmentation</i>	Passed
	Passed
N/A	Passed
N/A	Passed