Project Description: Anomaly Detection in Task Performance Using Deep Learning

Objective: To develop a deep learning model capable of analysing a person's task performance by learning their baseline behaviours from video inputs. The model will identify deviations or anomalies when presented with new or unseen data, providing textual reasoning for detected anomalies.

Project Scope:

1. **Model Training:**
    - Input: One or more videos of a person performing a specific task.
    - Purpose: To establish a baseline of the person's routine task behaviours, including patterns, movements, interactions, and timing.
2. **Anomaly Detection:**
    - Input: New or unseen video data of the same person performing the task.
    - Output: Identification of deviations from the baseline behaviours, along with textual reasoning for each detected anomaly.
3. **Examples of Anomalies:**
    - **Unusual Task Performance:** Performing tasks not typically part of the routine.
    - **Interaction with Different Objects:** Using or interacting with objects that are not part of the usual task.
    - **Unusual Pauses:** Pausing for durations significantly different from the established baseline.
    - **Unusual Movements:** Movements that deviate from the typical patterns learned by the model.
    - **Other Unusual Behaviours:** Any behaviours that the model identifies as inconsistent with the baseline, supported by textual explanations.

Expected Deliverables:

1. A trained deep learning model capable of:
    - Learning task-specific behaviours from input videos.
    - Detecting anomalies in new video inputs.
    - Providing textual explanations for detected anomalies.

Additional Requirements:

• It should prioritize accuracy in anomaly detection and clarity in textual explanations.

End Goal: To provide a reliable tool for monitoring task performance, identifying deviations, and offering actionable insights through detailed textual feedback.