Comprehensive Technical Report: Video Segment Analysis (Frames 0-175)

1. Video Segment Overview

- **Frame Range Analyzed:** 0 to 175
- **Total Pairwise Comparisons:** 35
- **Key Behavioral Trends Observed:**
  - **Two distinct phases of activity:**
    - **Active Phase (Frames 0-115):** Significant head and gaze movements, with two major gaze direction changes.
    - **Inactive Phase (Frames 115-175):** No movement detected (possible subject absence or static pose).
  - **Identity change detected once (Frames 0 → 5), suggesting possible subject swap or tracking error.**

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2. Aggregate Metrics

Gaze Analysis

- **Average gaze angle difference:** 6.56° (moderate variability)
- **Maximum gaze angle change:** 98.60° (Frame 110 → 115, indicating a sudden large shift in attention)
- **Gaze direction changes: 2 times** (Frames 65 → 70 and 110 → 115)

Head Pose Analysis

- **Yaw (left-right rotation):**
  - Avg: 4.18° | Max: 43.64° (Frame 110 → 115)
- **Pitch (up-down tilt):**
  - Avg: 6.89° | Max: 43.37° (Frame 105 → 110)
- **Roll (side tilt):**
  - Avg: 6.30° | Max: 72.93° (Frame 110 → 115, extreme head tilt)

Identity Analysis

- **Average face distance difference:** `NaN` (inconsistent tracking)
- **Identity match changes: 1 time** (Frames 0 → 5)

Phone Interaction

- **No phone usage detected** in any frame.

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3. Detailed Frame-to-Frame Analysis Highlights

Key Active Segments:

1. **Frames 0 → 5:**
    - Identity change detected (possible tracking error or subject swap).
    - Moderate head movement (pitch Δ=25.93°).
2. **Frames 65 → 70:**
    - **First gaze direction change (Δ=43.77°).**
    - Significant head roll (Δ=38.95°).
3. **Frames 110 → 115:**
    - **Largest gaze shift (Δ=98.60°).**
    - Extreme head movements (yaw Δ=43.64°, roll Δ=72.93°).

Inactive Segments (Frames 115-175):

- **No movement detected in gaze, head pose, or identity.**
- Possible explanations:
    - Subject left the frame.
    - Camera froze or tracking failed.

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4. Technical Conclusions

Overall Behavioral Patterns:

- **Highly dynamic head and gaze movements in early frames (0-115), followed by complete inactivity.**
- **Two major gaze shifts suggest attention redirections (possibly reacting to external stimuli).**
- **Extreme head rotations (especially roll) may indicate physical adjustments or posture changes.**

Significant Attention Points:

1. **Frame 110 → 115:**

    - Extreme gaze shift (98.6°) + large head rotations → **possible reaction to sudden event.**
2. **Identity Change (Frame 0 → 5):**
    - Could indicate tracking error or actual subject swap.

Recommendations for Further Investigation:

1. **Verify tracking consistency** (especially for identity changes).
2. **Check environmental context** (what caused the extreme gaze/head movements at Frames 65-70 & 110-115?).
3. **Analyze video source for potential freezing/glitches** (inactive phase may be artificial).
4. **Cross-reference with audio/other sensors** (if available) to explain behavioral shifts.

Final Note: This segment shows **two distinct behavioral modes**—active engagement followed by abrupt stillness. Further contextual data is needed to determine whether the inactivity is due to tracking failure or a genuine lack of movement.

End of Report.