# Archery Evaluation — Video-4

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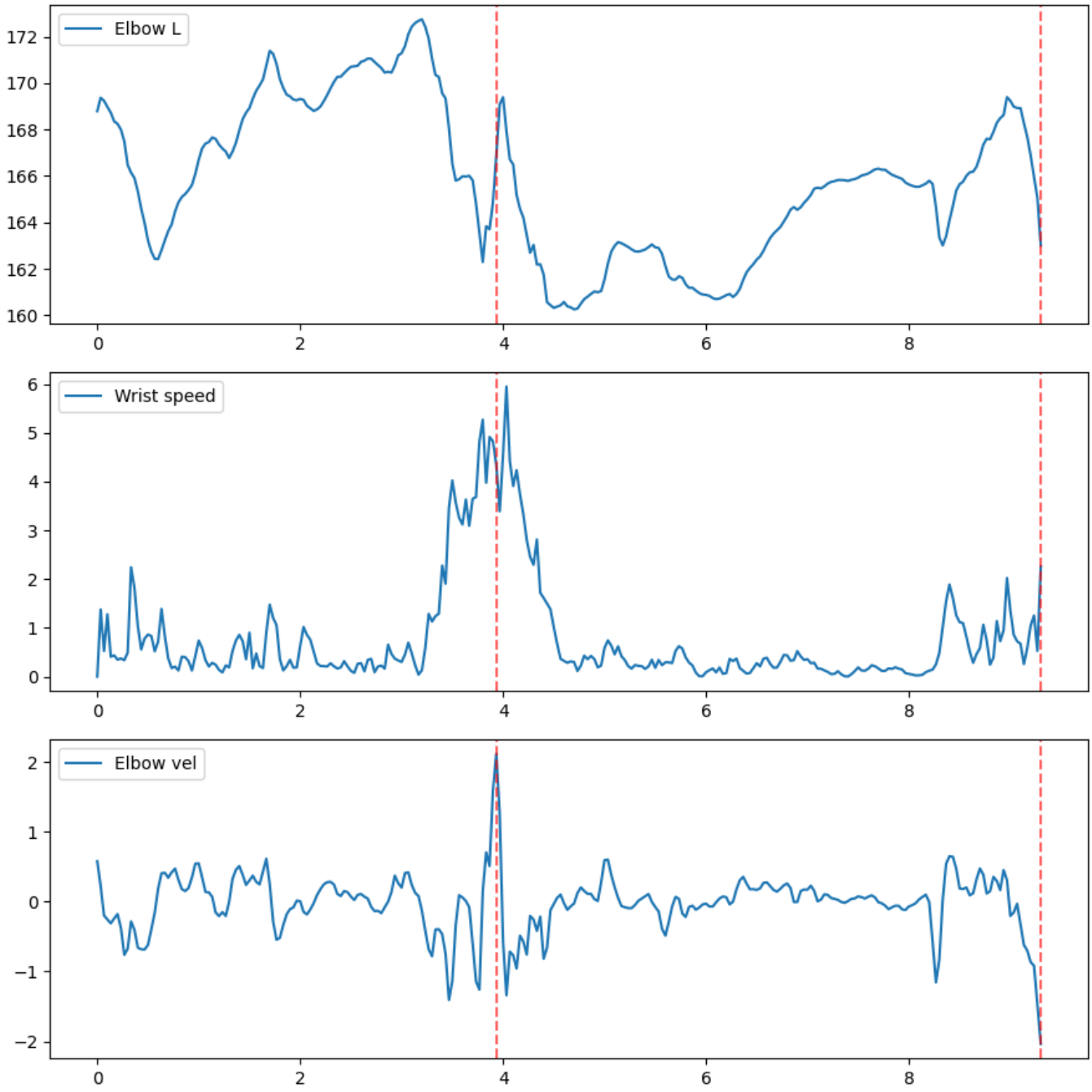
One-line summary: Pose-based kinematic analysis and release detection for archery posture evaluation.




## Methodology:

- Methodology: We extract 2D pose landmarks from input video using MediaPipe Pose.
- We compute elbow angles, wrist speed, stance width and elbow angular velocity over time.
- Release candidates are detected where wrist speed spikes co-occur with large elbow angular acceleration.
- A RandomForest classifier flags windows as GOOD/BAD posture using elbow and wrist statistics.
- Outputs: annotated video, metrics CSV, charts, and this PDF with visualizations.

## Claims / Novelty:

Claim (high-level): A computer-implemented method for assessing archery posture using co-occurrence

of wrist speed spikes and elbow angular velocity to identify release events and advise corrective actions. The method uses sliding-window stability metrics and a classifier to identify suboptimal posture windows.

**Key observations & release candidates:**

- Average elbow (left): 165.8 deg
- Average stance width (px): 38.4
- Detected release candidate frames: 118, 279