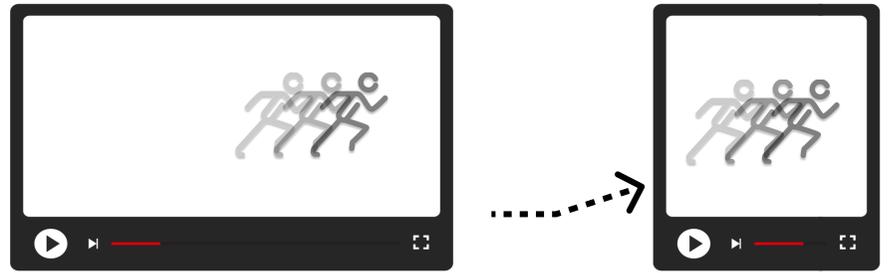


OPTIMAL CROP-OUT FOR PHOTOGRAPHING PEOPLE DURING SPORTING ACTIVITIES

author: Anastasiia Lebedenko
supervisor: prof. Ing. Adam Herout, PhD.

1. OBJECTIVE

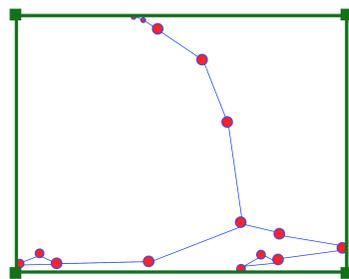
Minimal-size video crop-out, centred on person in motion.



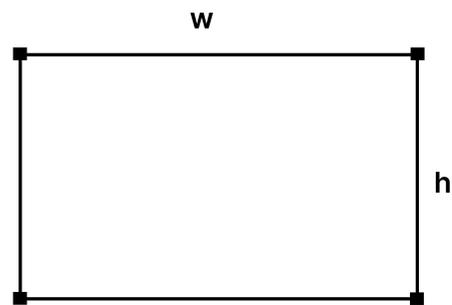
2. PROPOSED SOLUTION



2.1 Landmark detection using MediaPipe Pose API.



2.2 Bounding box around landmark points.

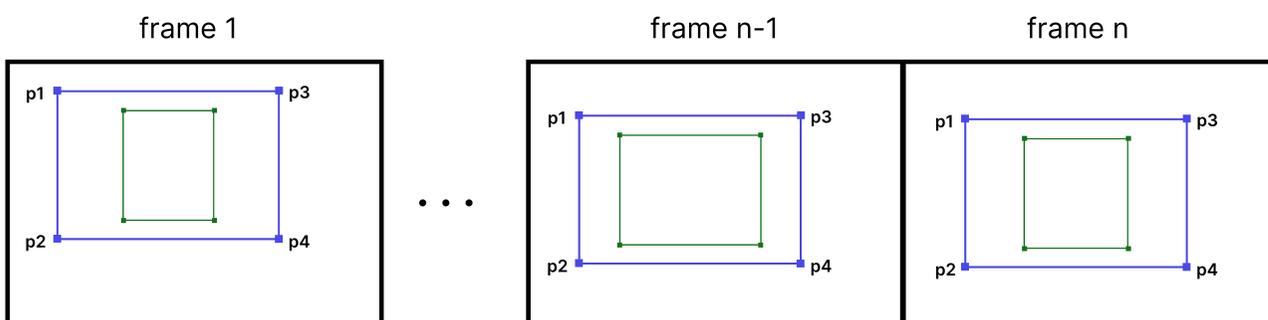


2.3 Width and height of the largest bounding box among all frames is determined.

3. RESULTS



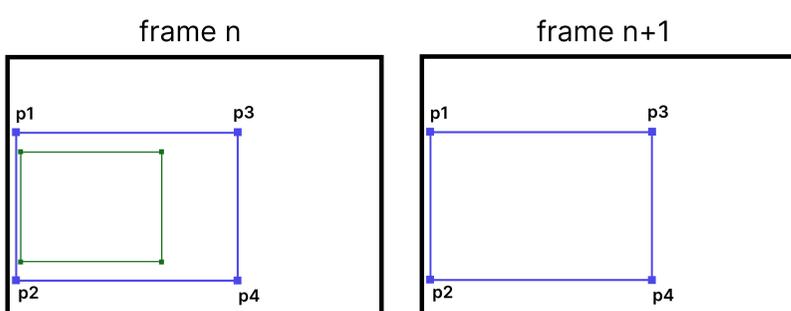
3.1 Bounding box on the sample video.



2.4 Crop-out box of width w and height h is set for every frame. Bounding box is centred inside crop-out box.



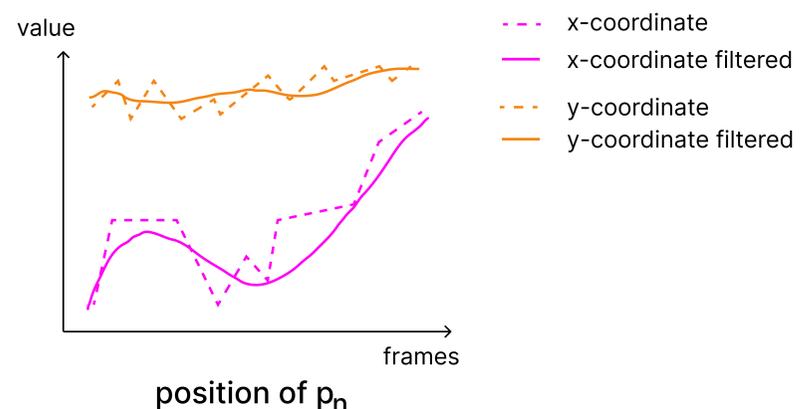
3.2 Crop-out box on the sample video.



a) Bounding box on the edge of input video, removal of centring constraint.

b) Landmarks not detected, duplicate of previous crop-out frame used.

2.5 Edge case behavior



2.6 To stabilize output video, crop-out points' values are filtered.