

# 3D Human Pose Estimation with Occlusions: Introducing BlendMimic3D Dataset and GCN Refinement

## Supplementary Material



Figure 10. Subject SS3 engaging in the “Focus\_multi” action. This figure showcases the same frame from different perspectives: (top left) Camera 0; (top right) Camera 1; (bottom left) Camera 2; (bottom right) Camera 3.

ments in the accuracy of pose estimation in scenarios with occlusions.

### 8. BlendMimic3D examples

For illustration purposes, Figure 10 presents all four camera views of the same frame from the “Focus\_multi” action in our synthetic test set, featuring subject SS3. This particular action is designed to simulate a multi-person scenario within a supermarket setting, where three subjects interact amidst objects, creating occlusions.

### 9. Detailed Evaluation of GCN

Table 3 presents an evaluation of the GCN pose refinement block’s performance across actions in the BlendMimic3D test set. Covering both CPN-based and Detectron2-based detections, the table demonstrates MPJPE improvements through the incorporation of the GCN into established 3D HPE models. Highlighted results demonstrate improve-

Table 3. Evaluation of our GCN pose refinement block against previous methods. This evaluation includes performance on both CPN-based and Detectron2-based detections, utilizing the BlendMimic3D test set. For each 3D HPE algorithm and corresponding 2D detector, the highest scores achieved, both independently and in combination with the GCN, are highlighted in green.

Model	2D HPE	TakesItem [mm]	TakesItem_multi [mm]	Focus [mm]	Focus_multi [mm]	Avg [mm]
VideoPose3D [30]	CPN [7]	167.5	170.8	178.3	183.4	175.0
+ GCN	CPN [7]	106.9	109.7	112.0	122.4	112.7
VideoPose3D [30]	Detectron2 [39]	188.8	194.6	201.8	206.7	198.0
+ GCN	Detectron2 [39]	117.9	119.7	130.7	142.6	127.7
PoseFormerV2 [40]	CPN [7]	152.6	157.8	141.5	142.2	148.6
+ GCN	CPN [7]	106.4	108.7	105.3	109.7	107.5
PoseFormerV2 [40]	Detectron2 [39]	157.8	164.9	142.5	154.8	155.0
+ GCN	Detectron2 [39]	103.7	106.2	99.3	118.3	106.9
D3DP [34]	CPN [7]	94.7	95.9	100.3	112.1	100.7
+ GCN	CPN [7]	91.8	93.3	96.3	99.9	95.3
D3DP[34]	Detectron2 [39]	88.4	95.0	101.7	114.6	99.9
+ GCN	Detectron2 [39]	88.8	94.6	98.8	99.3	95.3