

# Triple-level Human Body Structure Modeling Neural Network for Monocular 2D Pose Estimation

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## Background

### Application

- Human-computer interaction
- Human action recognition
- Animation
- ...

## Proposed method



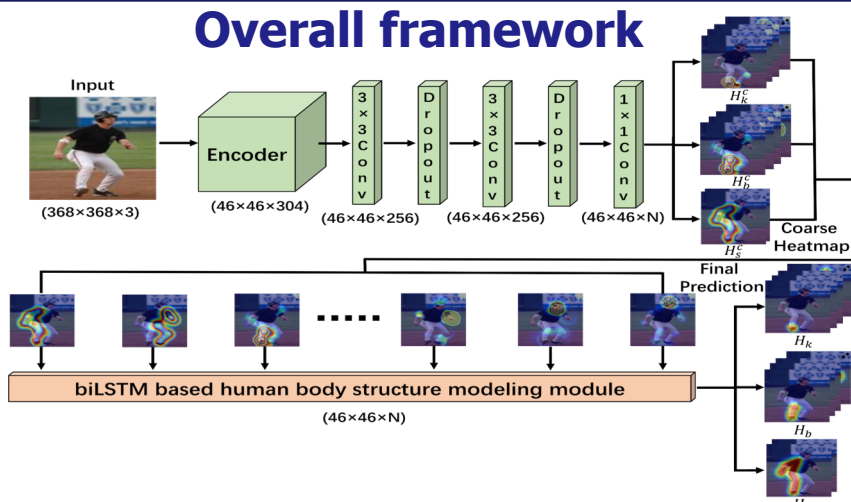
### Target

- Improve 2D pose estimation algorithm's accuracy
- The conventional work UniPose is baseline

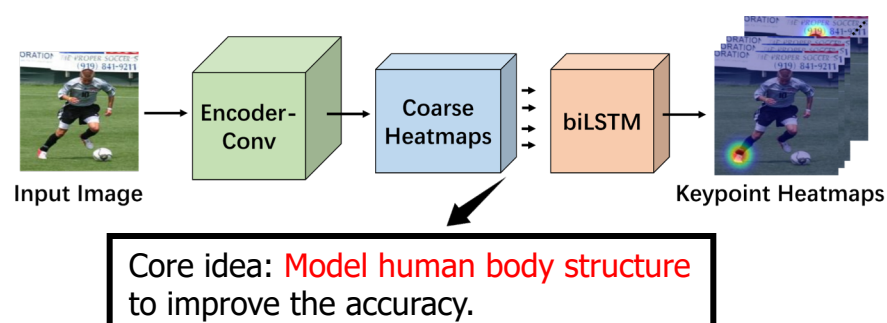
### Challenges

- Abnormal pose
- Background clutter
- ...

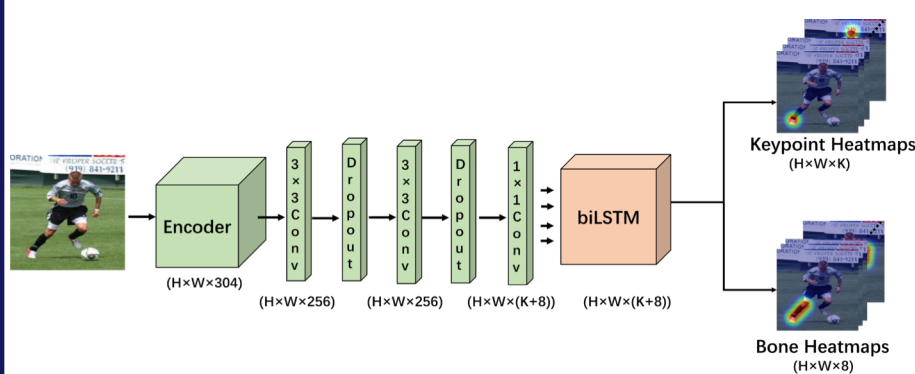
## Overall framework



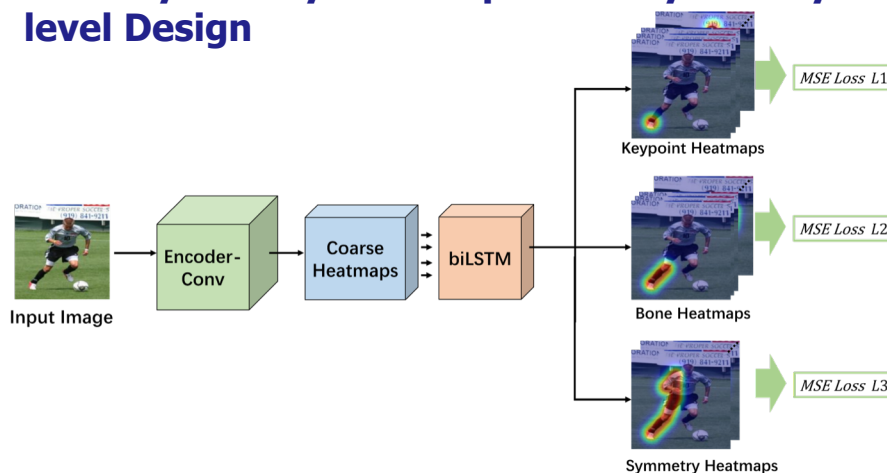
## P1: biLSTM based human body structure modeling module



## P2.1: Bone Heatmap based Bone-level Design

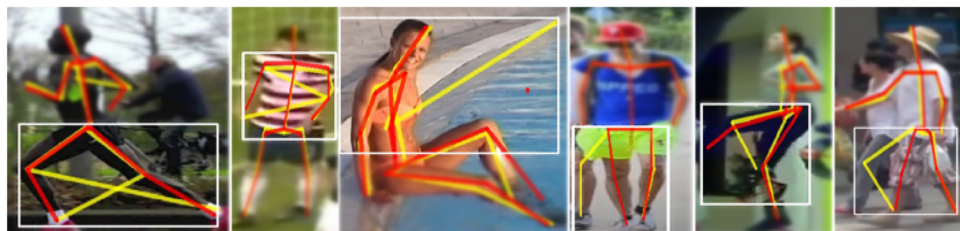
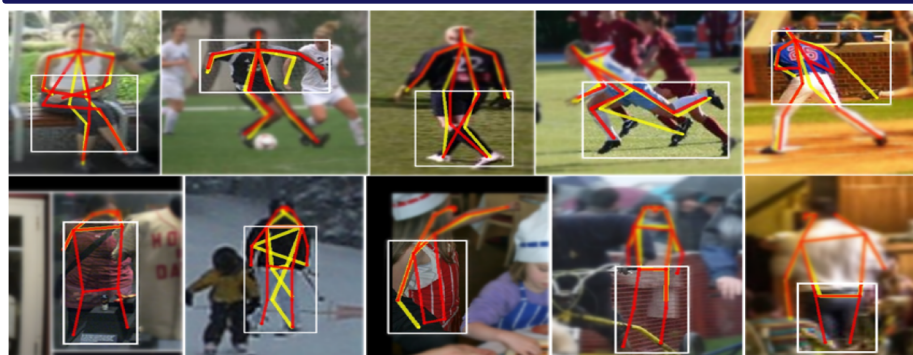


## P2.2: Symmetry Heatmap based Symmetry-level Design



## Experiments Result

Dataset/Metric	UniPose %	P1+P2 %
LSP/PCK@0.5	94.8	95.2
MPII/PCKh@0.2	92.7	92.9
COCOval/mAP	76.3	76.6



## Conclusion

- The proposed methods enhance the performance of UniPose baseline on three challenging datasets and metrics

