

# Human Motion Understanding

## 3 Human Motion Application (1)

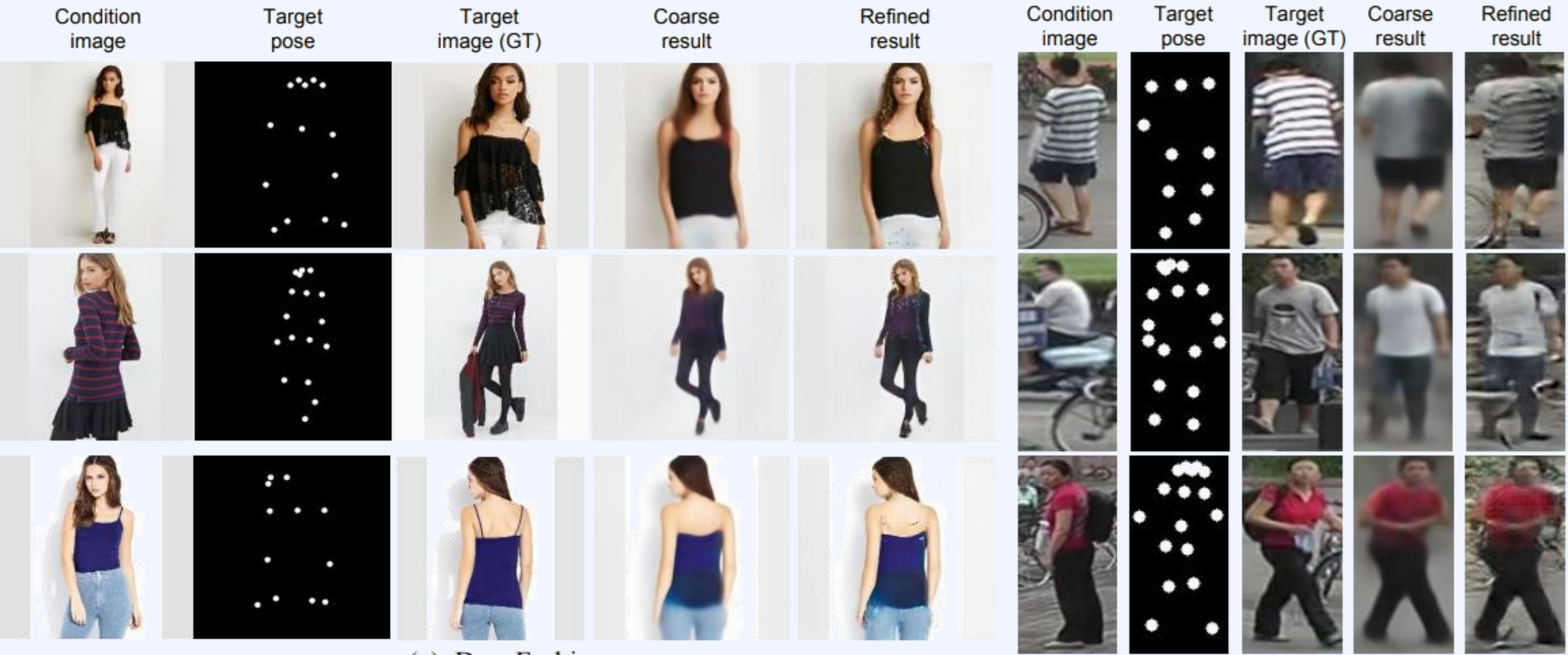
# Human Motion Understanding

## Human Motion Application (1)

### 3.

Human Motion Application

L. Ma et al. Pose Guided Person Image Generation. NIPS



(a) DeepFashion

(b) Market-1501





# Human Motion Understanding

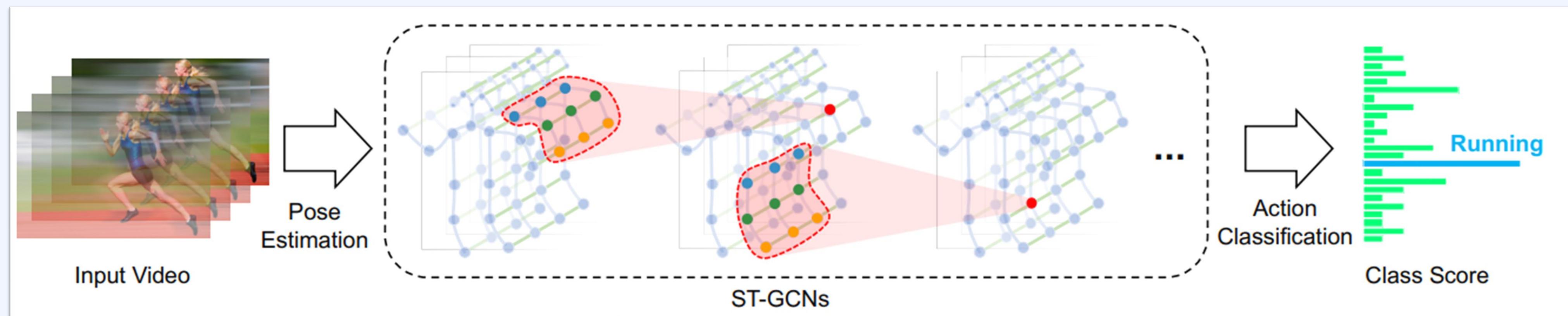
## Human Motion Application (1)

### 3.

Human Motion  
Application

S. Yan et al. Spatial Temporal Graph Convolutional Networks for Skeleton-Based Action Recognition. AAAI

### ST-GCN



# Human Motion Understanding

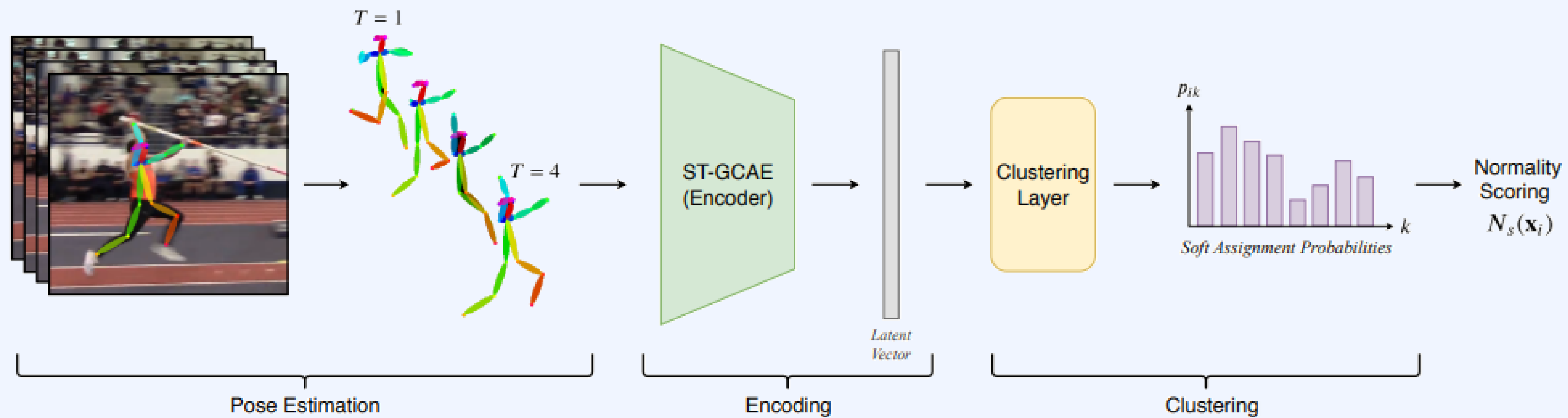
## Human Motion Application (1)

### 3.

Human Motion  
Application

A. Markovitz et al. Graph Embedded Pose Clustering for Anomaly Detection. CVPR

#### ST-GCAE





# Human Motion Understanding

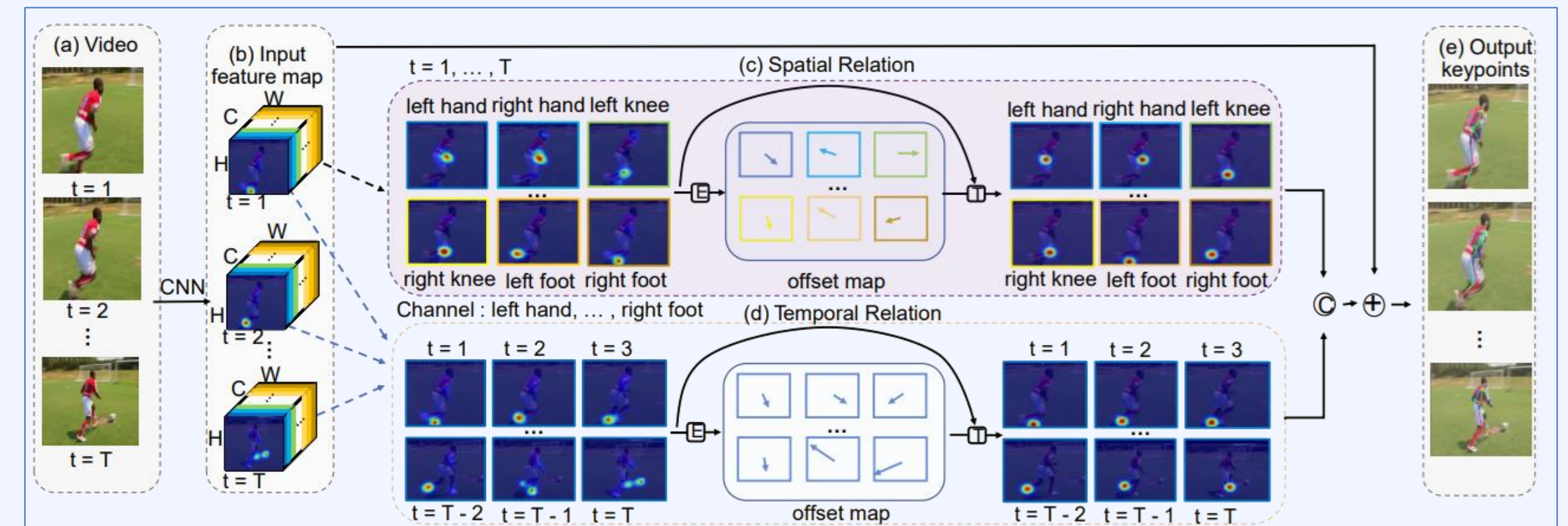
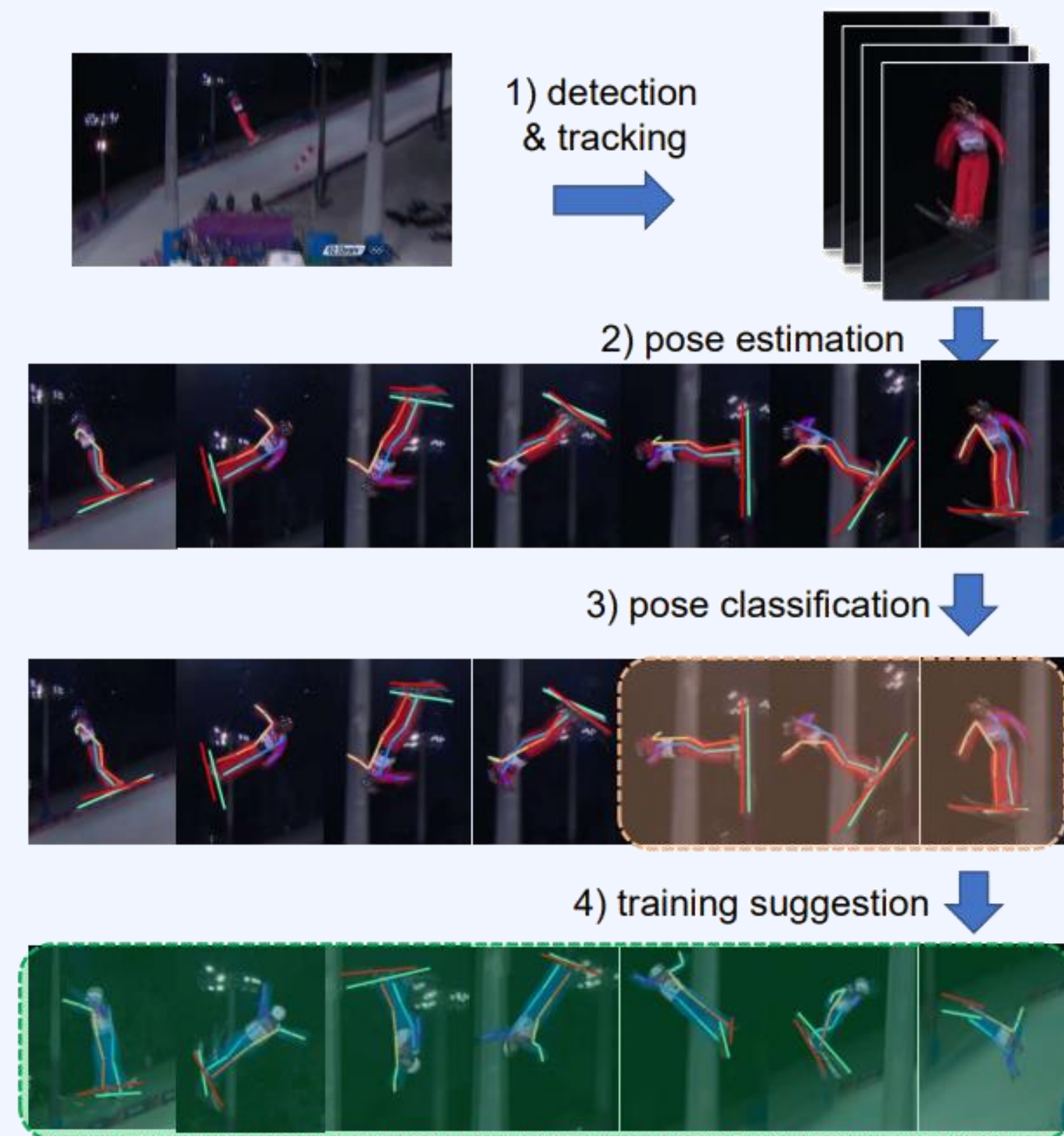
## Human Motion Application (1)

### 3.

Human Motion Application

J. Wang et al. AI Coach: Deep Human Pose Estimation and Analysis for Personalized Athletic Training Assistance. ACM MM

#### AI Coach





## Human Motion Understanding Human Motion Application (1)

3.

Human Motion  
Application

C. Patel et al. TAILORNET: PREDICTING CLOTHING IN 3D AS A FUNCTION OF HUMAN POSE, SHAPE AND GARMENT STYLE. CVPR

### TAILORNET

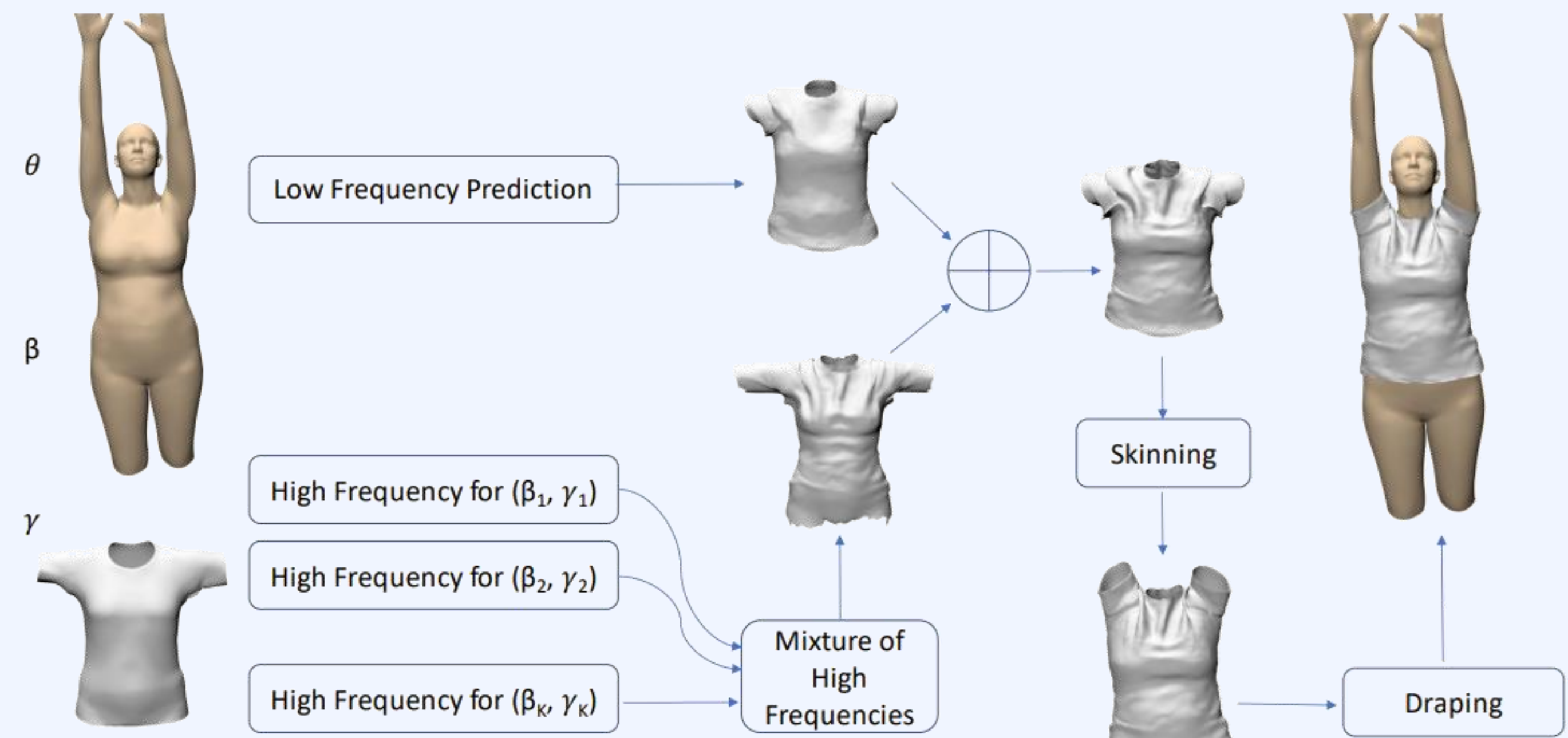


# Human Motion Understanding

## Human Motion Application (1)

C. Patel et al. TAILORNET: PREDICTING CLOTHING IN 3D AS A FUNCTION OF HUMAN POSE, SHAPE AND GARMENT STYLE. CVPR

### TAILORNET



Method	Static/Dynamic	Pose Variations	Shape Variations	Style Variations	Model Public	Dataset Public
Santesteban <i>et al.</i> [46]	Dynamic	✓	✓	✗	✗	✗
Wang <i>et al.</i> [58]	Static	✗	✓	✓	✓	✓
DeepWrinkles [29]	Dynamic	✓	✓	✗	✗	✗
DRAPE [17]	Dynamic	✓	✓	✗	✗	✗
GarNet [18]	Static	✓	✓	✗	✗	✓
Ours	Static	✓	✓	✓	✓	✓



# Human Motion Understanding Human Motion Application (1)

3.

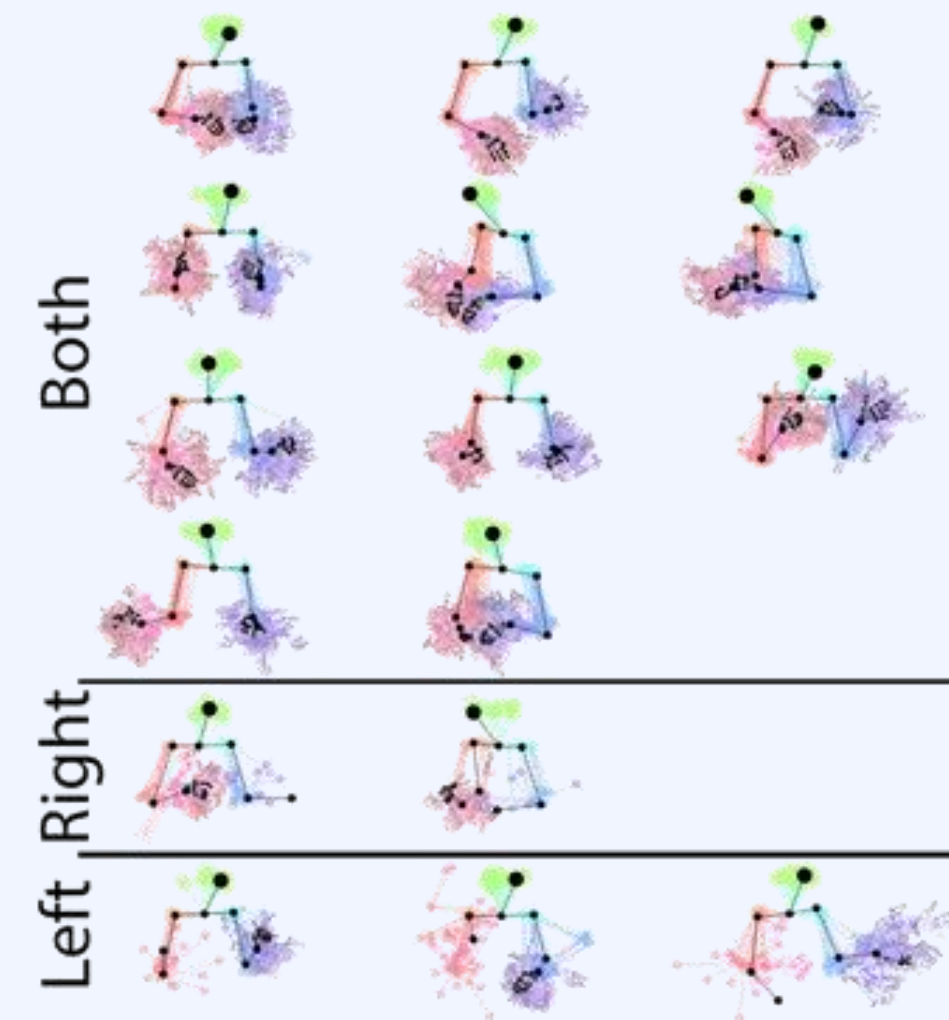
Human Motion  
Application

N. Willett et al. Pose2Pose: Pose Selection and Transfer for 2D Character Animation. IUI

## Pose2Pose



Input Video



Pose Cluster Selection



Character Creation



Automatic Animation

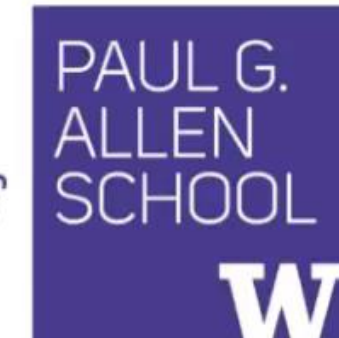


## Human Motion Understanding Human Motion Application (1)

3.

Human Motion  
Application

C. Weng et al. Photo Wake-Up: 3D Character Animation from a Single Photo. CVPR



# Photo Wake-Up: 3D Character Animation from a Single Photo

Chung-Yi Weng<sup>1</sup>, Brian Curless<sup>1</sup>, Ira Kemelmacher-Shlizerman<sup>1,2</sup>

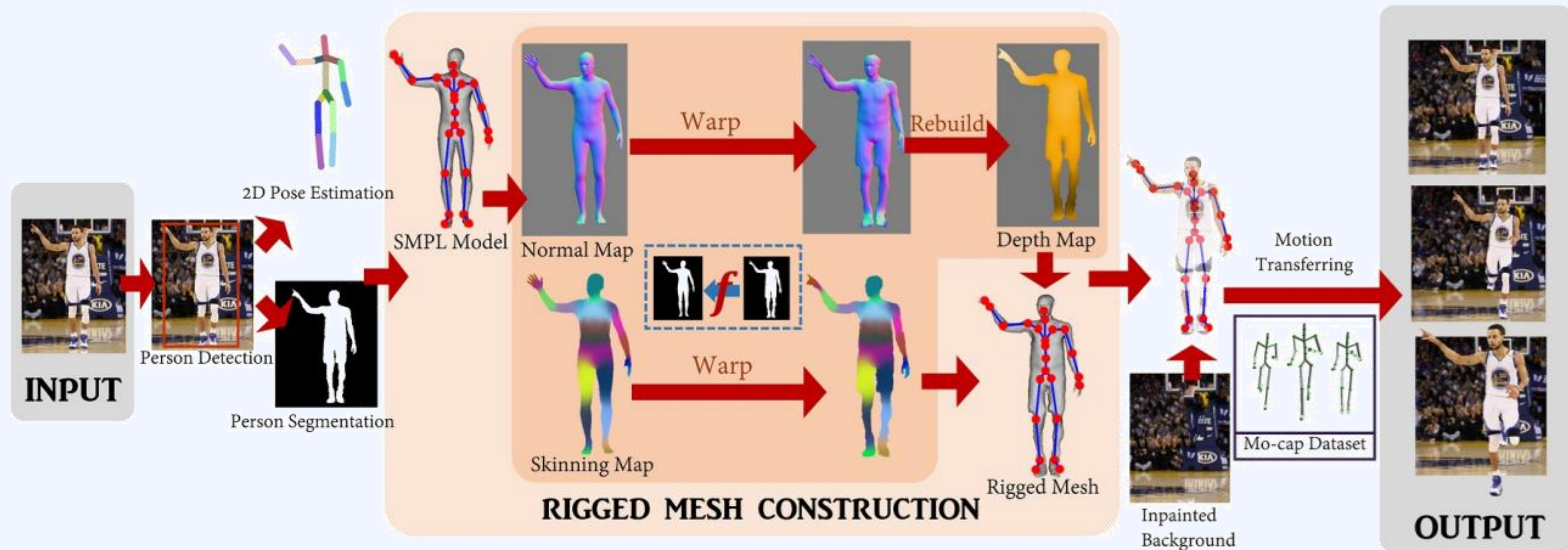
<sup>1</sup>University of Washington

<sup>2</sup>Facebook, Inc.

## Human Motion Understanding Human Motion Application (1)

### 3. Human Motion Application

C. Weng et al. Photo Wake-Up: 3D Character Animation from a Single Photo. CVPR

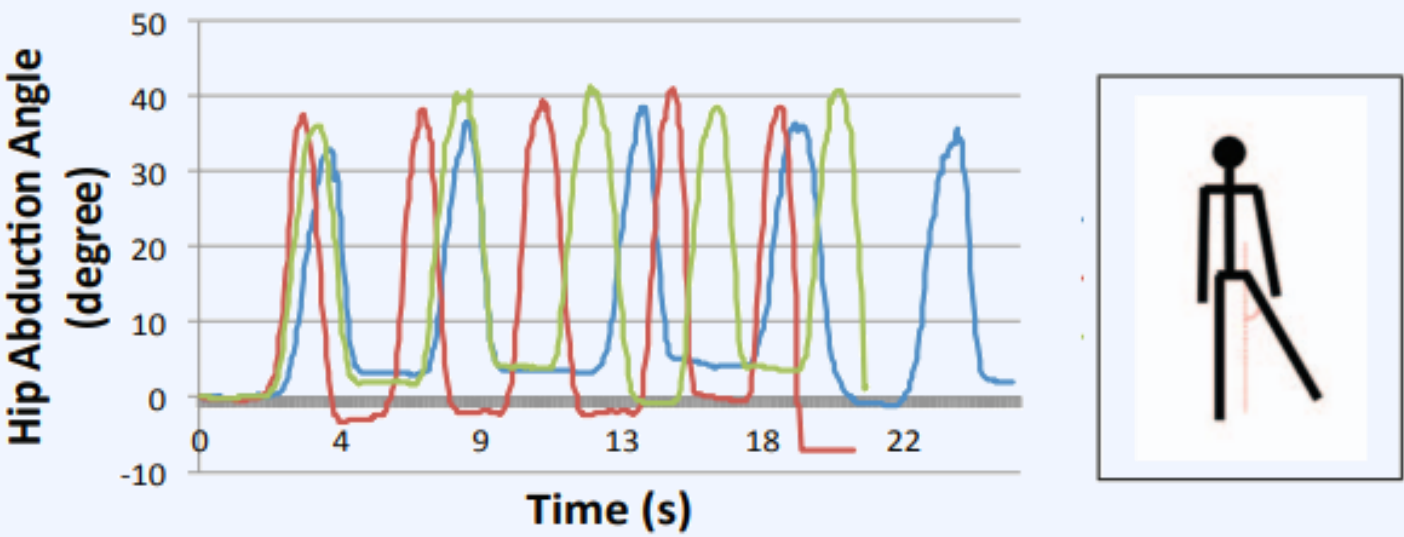
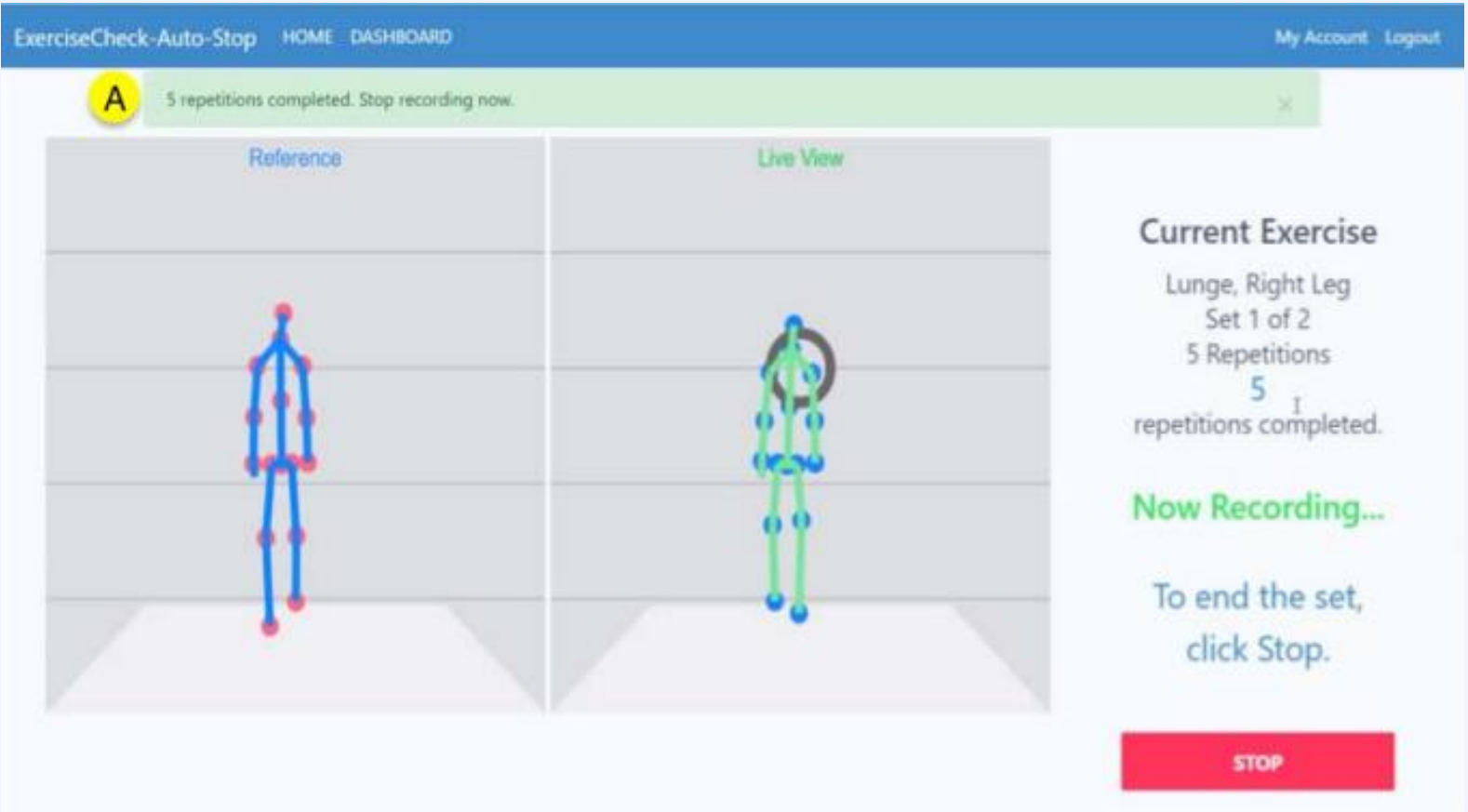
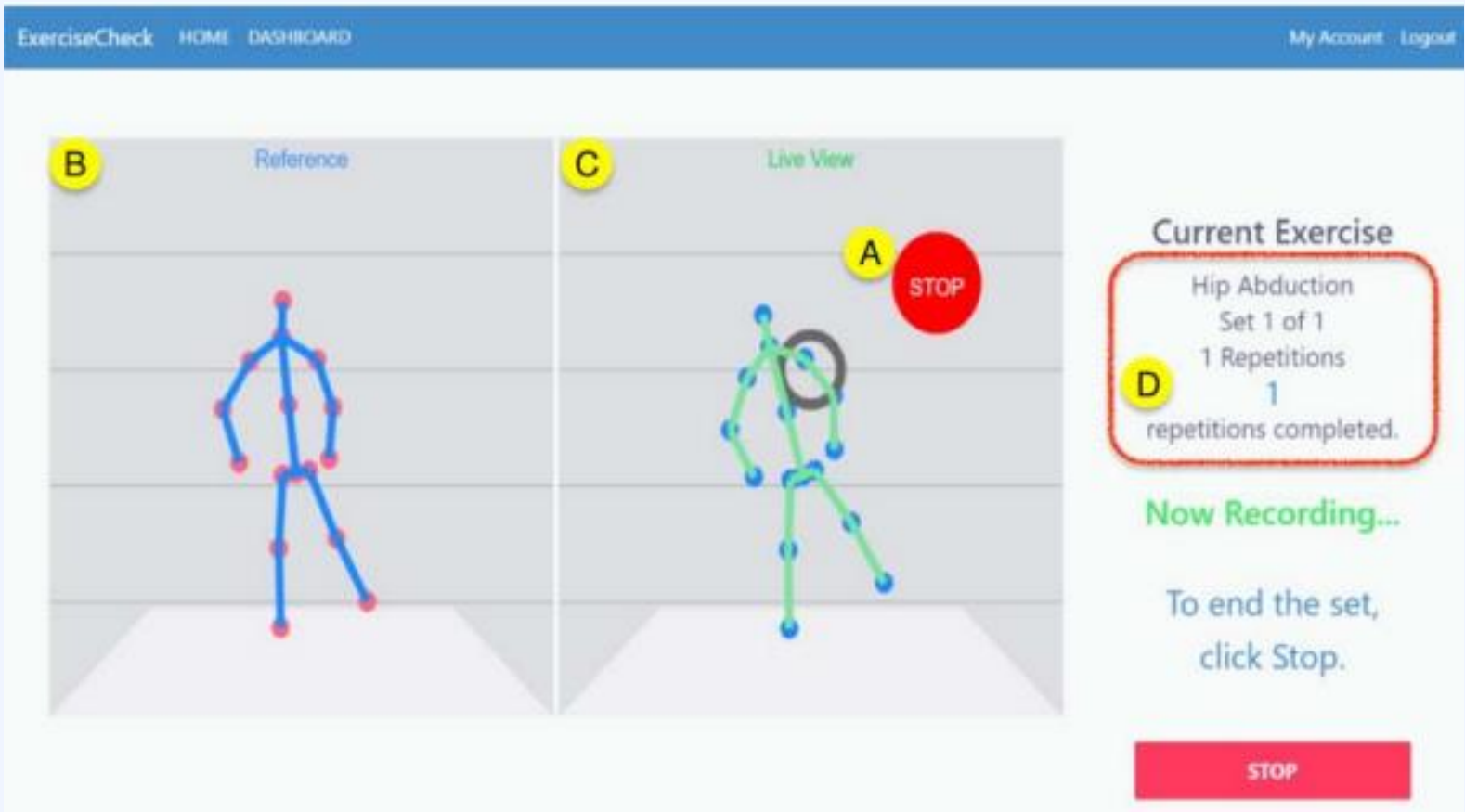




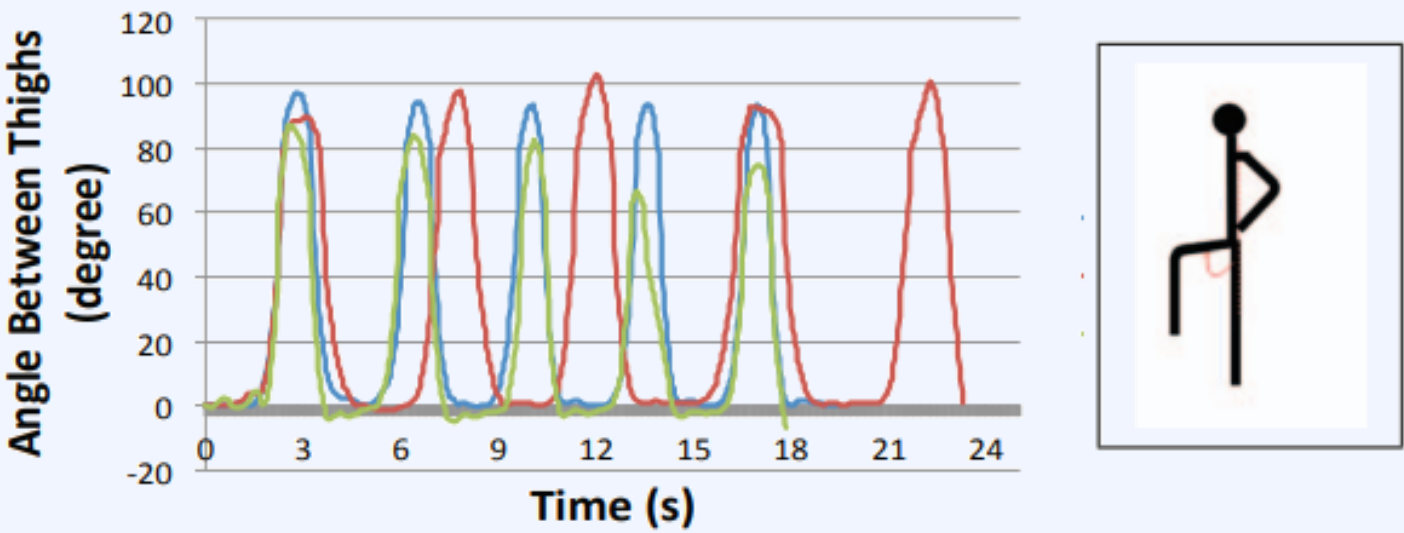
# Human Motion Understanding

## Human Motion Application (1)

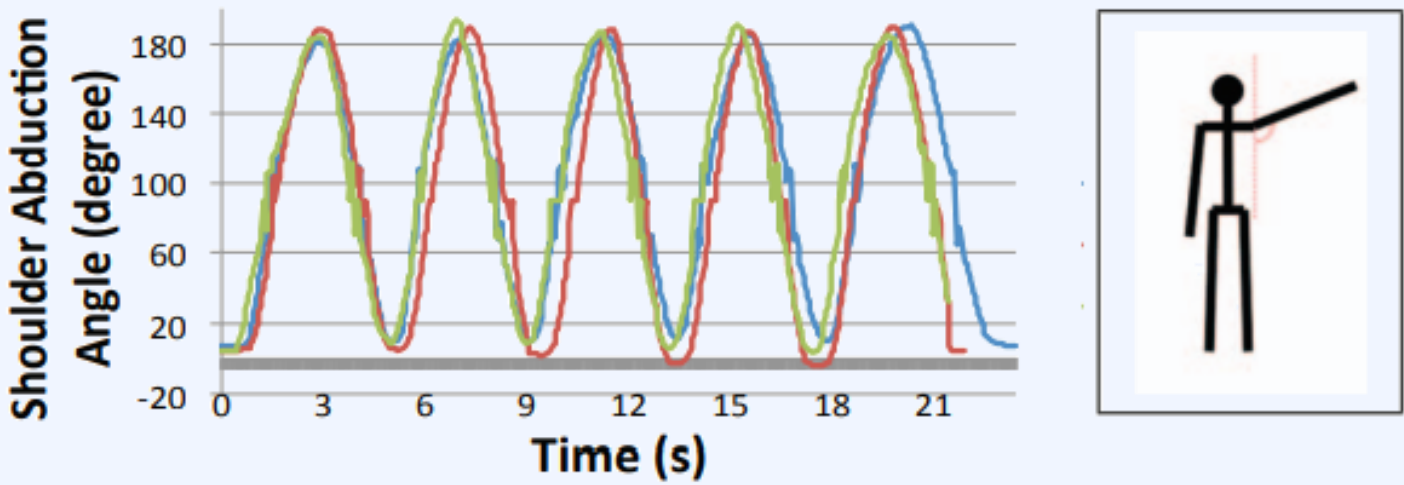
Y. Gu et al. Home-based Physical Therapy with an Interactive Computer Vision System. ICCV Workshop



(a) Patient 1 - Hip Abduction exercise



(b) Patient 2 - Marching exercise

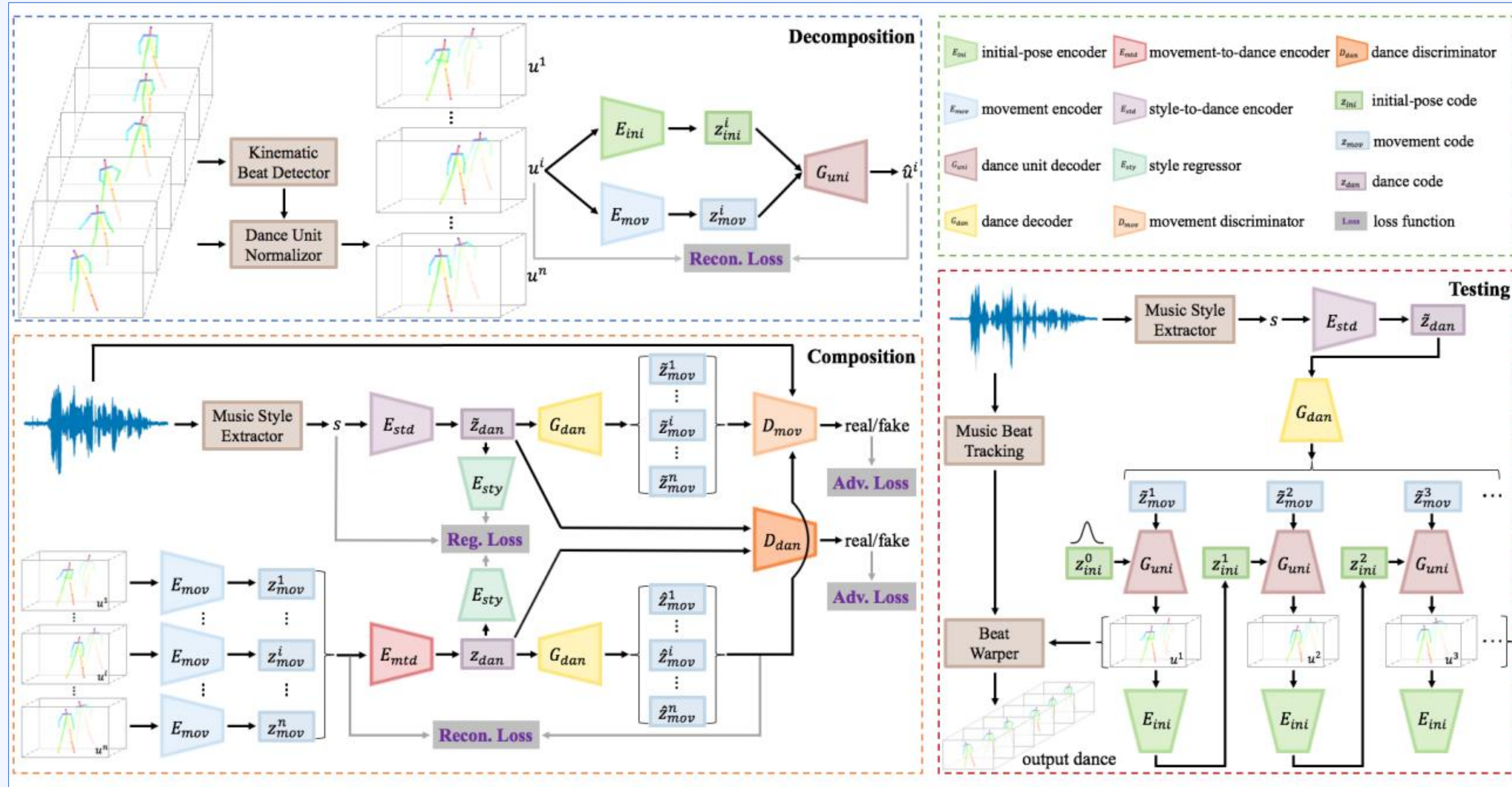


(c) Patient 3 - Shoulder Abduction exercise



# Human Motion Understanding Human Motion Application (1)

H. Lee et al. Dancing to Music. NeurIPS



3.

Human Motion  
Application



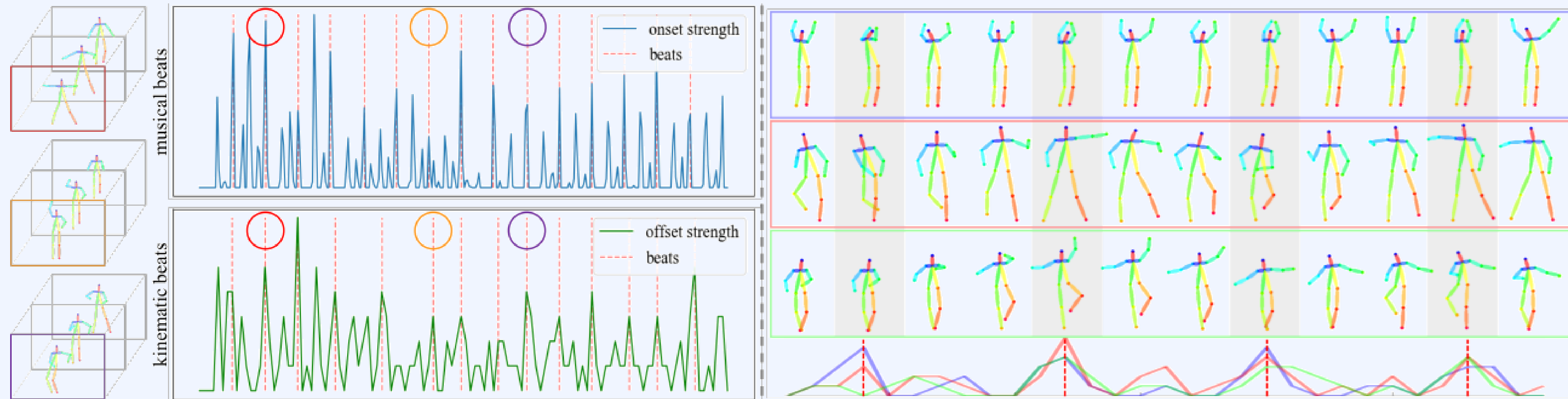
# Human Motion Understanding

## Human Motion Application (1)

H. Lee et al. Dancing to Music. NeurIPS

3.

Human Motion  
Application



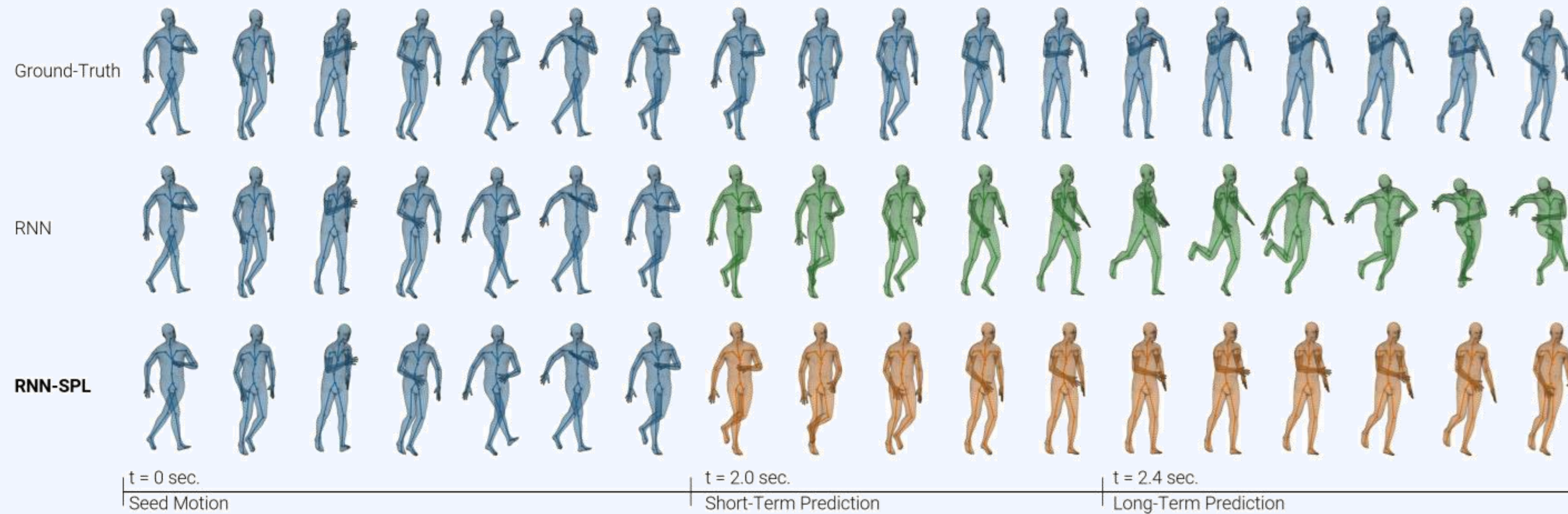
# Human Motion Understanding

## Human Motion Application (1)

### 3.

Human Motion  
Application

E. Aksan et al. Structured Prediction Helps 3D Human Motion Modelling. ICCV





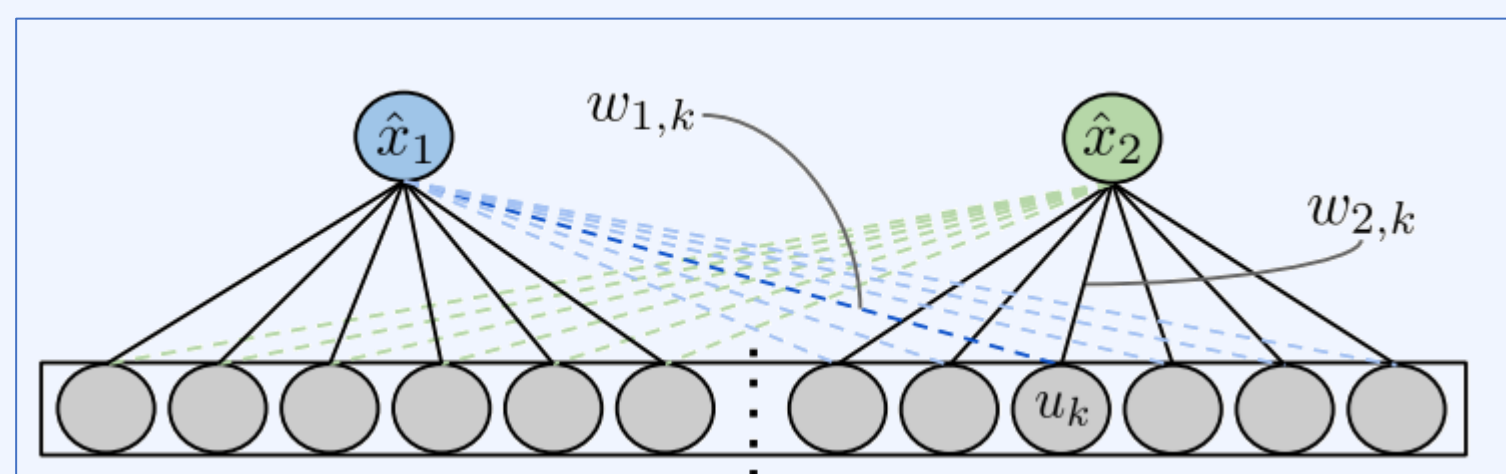
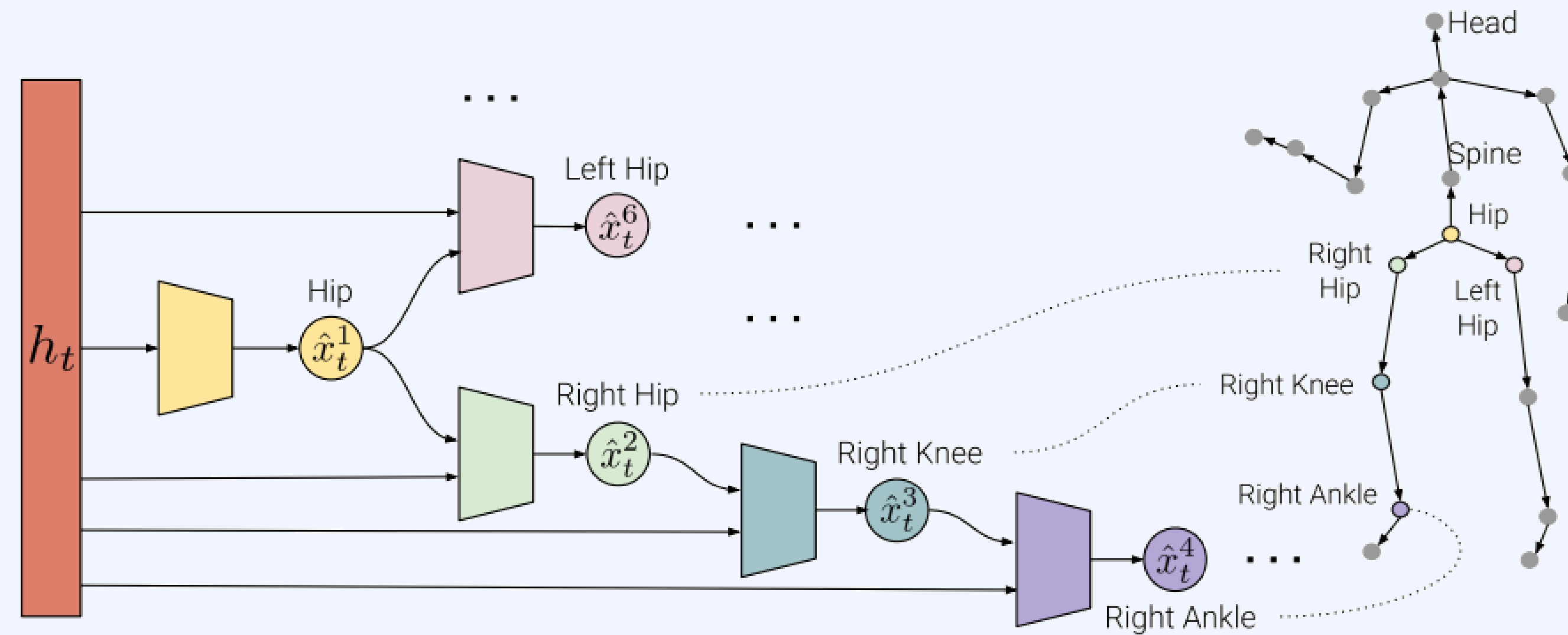
# Human Motion Understanding

## Human Motion Application (1)

### 3.

Human Motion Application

E. Aksan et al. Structured Prediction Helps 3D Human Motion Modelling. ICCV



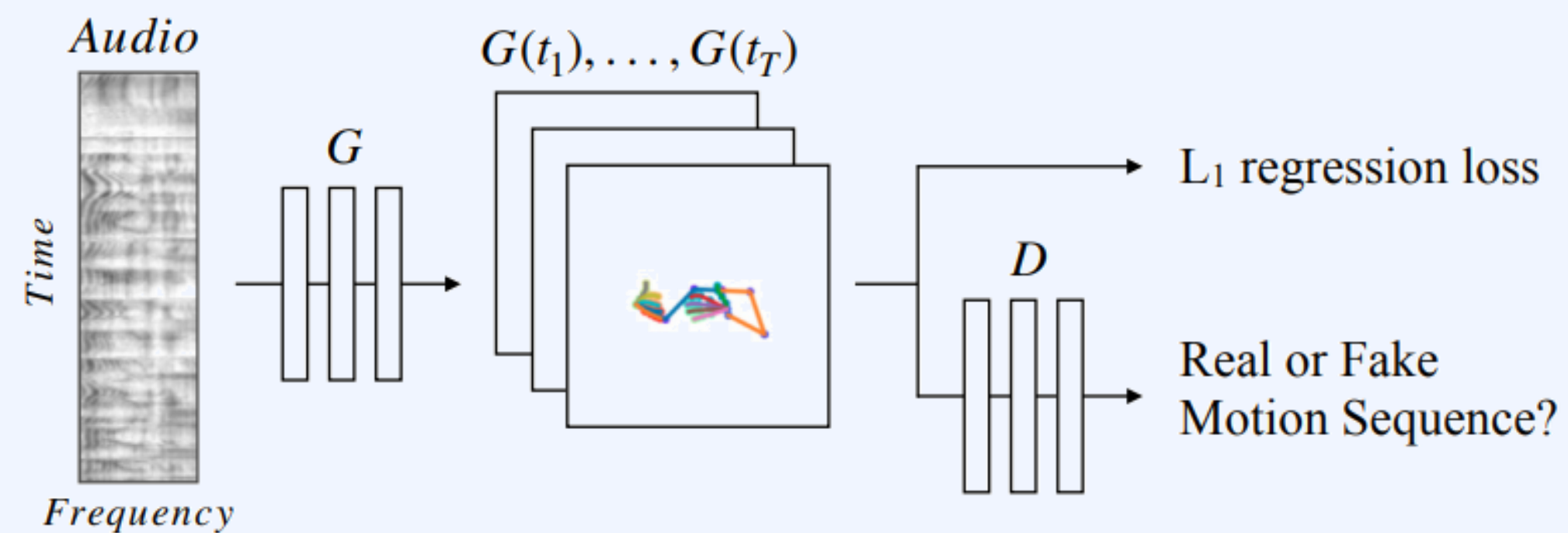
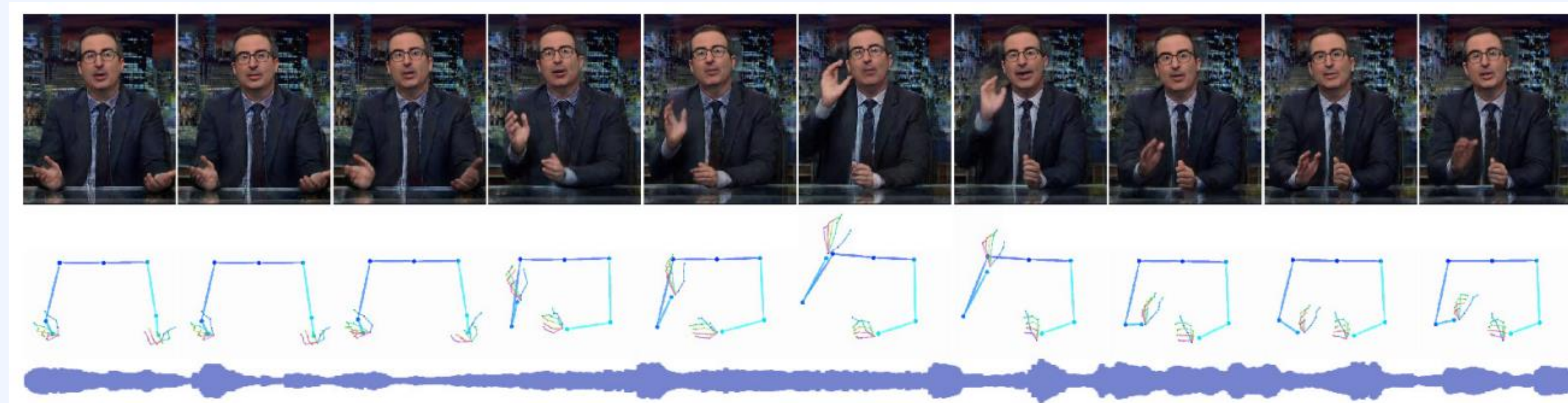
# Human Motion Understanding

## Human Motion Application (1)

3.

Human Motion  
Application

S. Ginosar et al. Learning Individual Styles of Conversational Gesture. CVPR





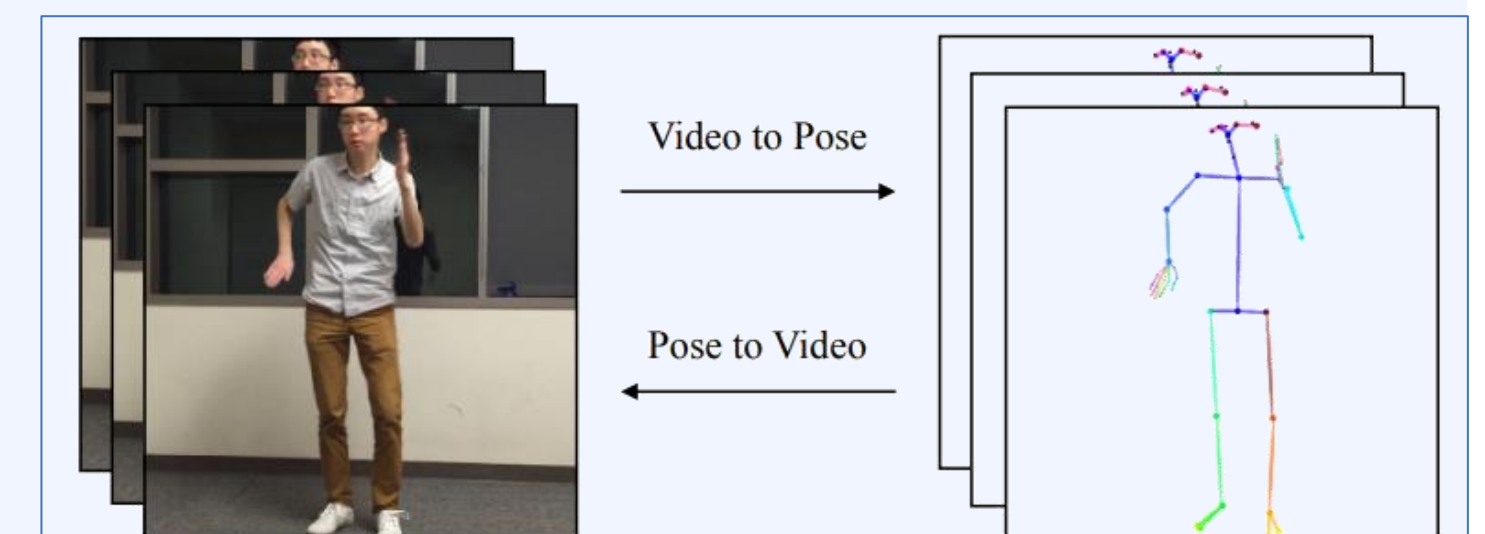
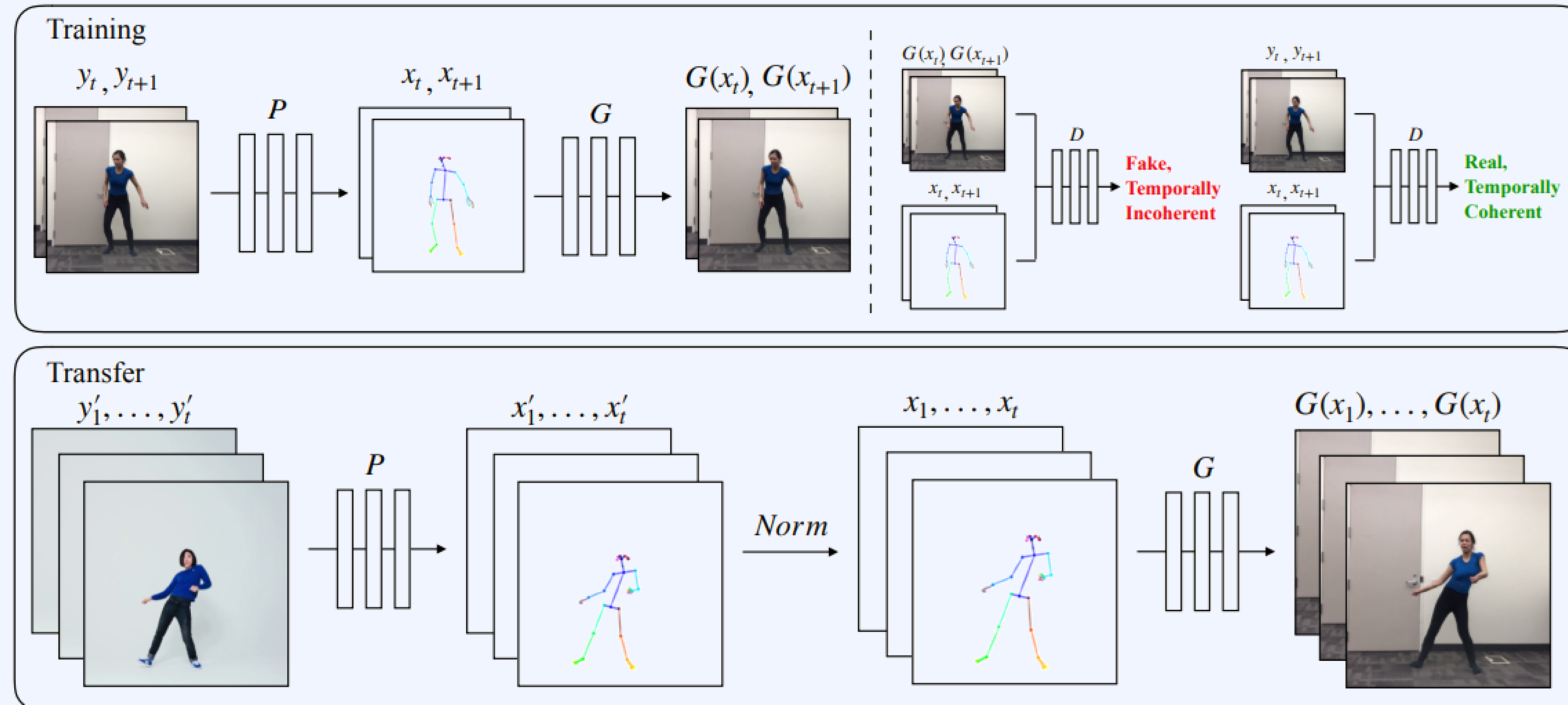
# Human Motion Understanding

## Human Motion Application (1)

### 3.

Human Motion Application

C. Chan et al. Everybody Dance Now. ICCV



## Human Motion Understanding Human Motion Application (1)

3.

Human Motion  
Application

R. Li et al. AI Choreographer: Music Conditioned 3D Dance Generation with AIST++. ICCV

