Modeling Mutual Context of Object and Human Pose

HELLO!

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Human pose estimation

HUMAN POSE ESTIMATION

Human-Object Interaction

Holistic image based classification

Detailed understanding and reasoning

- **Human pose estimation**

OBJECT DETECTION

OBJECT DETECTION

Human-Object Interaction

Holistic image based classification

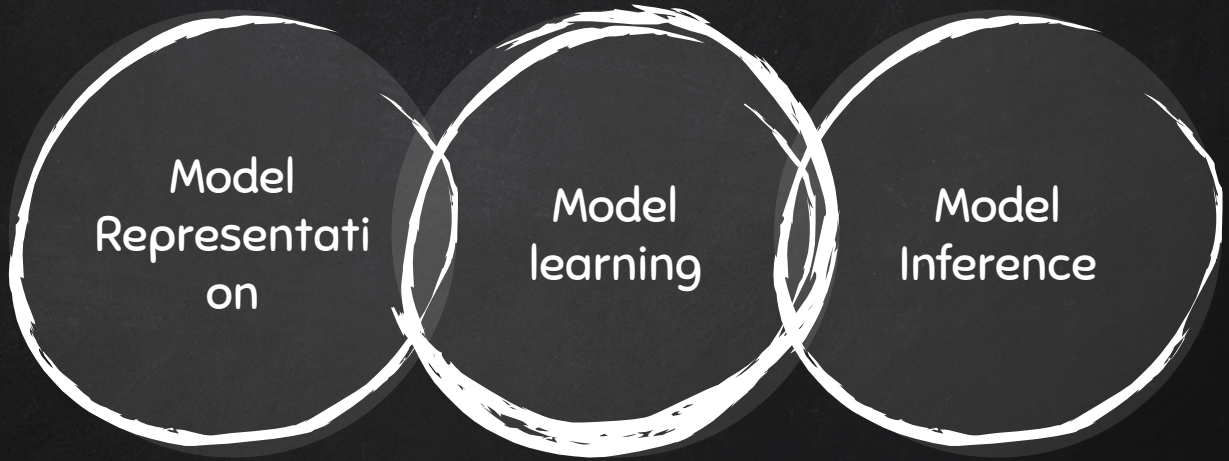
Detailed understanding and reasoning

- Human pose estimation
- **Object detection**

Big concept

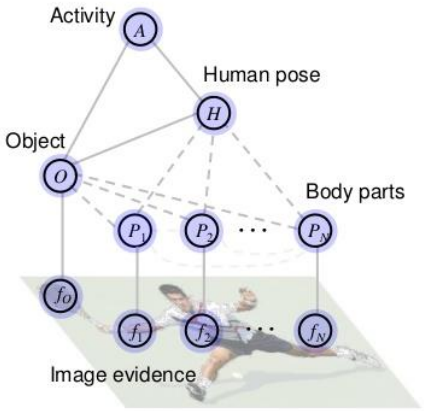
Mutual context of Object and human pose in HOI.

Mutual context of object and human pose



Mutual context model representation

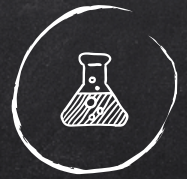
Mutual Context Model Representation



P: l_P: location; θ_P: orientation; s_P: scale.

f: Shape context. [Belongie et al, 2002]

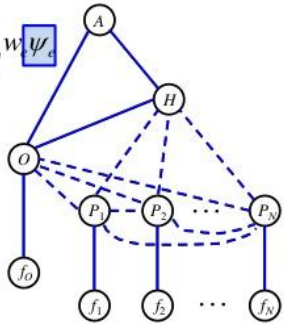

PATTERN
RECOGNITION
: MODEL
LEARNING



MODEL LEARNING

Model Learning

$$\Psi = \sum_{e \in E} w_e \psi_e$$



Approach:

- Maximum likelihood

$\psi_e(A,O)$ $\psi_e(A,H)$ $\psi_e(O,H)$
$\psi_e(H,P_n)$ $\psi_e(O,P_n)$ $\psi_e(P_m,P_n)$

- Standard AdaBoost

$\psi_e(O,f_O)$ $\psi_e(P_n,f_{P_n})$

Goals:

Hidden human poses
Structural connectivity
Potential parameters
Potential weights

REFERENCED MATERIAL

Research Paper :

http://vision.stanford.edu/documents/YaoFei-Fei_CVPR2010b.pdf

DataSet :

Sports images. HOI referred are sports related poses.

DataSet details :

Cricket Cricket Croquet defensive shot bowling shot Tennis Tennis Volleyball forehand serve smash

THANKS!

Any questions?

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