

Developing Improved Algorithms for Pose-Based Gait Recognition

Sanjay Kumar Gupta

Dedicated to my parents -

Mr. Ram Prasad Gupta

Mrs. Shyam Kali Gupta

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List of Symbols

Symbols	Description
F	Sequence of frames
i	index of frames
T	total number of frames in F
(x, y)	coordinates of a pixel in a frame
B_i	contour of i^{th} frame
k	index of a cluster
M	total number of sequence in gallery
P	sequence of poses
E	Dictionary of key-pose sets
N	Total number of key-pose sets in D
C	Class or identity of subject under GAEI
p_i	key-pose of i^{th} state
K	Number of poses in a set
U_t	difference of two frames of t^{th} and $(t + 1)^{th}$
A	a pose based energy image after difference of frames
G_i	GAEI feature of subject index i
\hat{G}	GAEI feature of test sequence
L	dimensionality of the GAEI feature
\mathcal{P}	Probability of predicted class
D^i	a pose of DGEI feature
\mathcal{C}	predicted class of a pose of DGEI feature

List of Abbreviations

GEI	Gait Energy Image
MSI	Motion Silhouettes Image
GHI	Gait History Image
MEI	Motion Energy Image
FDEI	Frame Difference Energy Image
AEI	Active Energy Image
GEnI	Gait Entropy Image
GFI	Gait Flow Image
CGI	Chrono-Gait Image
PEI	Pose Energy Image
PEI	Period Energy Image
BEI	Boundary Energy Image
GAEI	Generalized Active Energy Image
DGEI	Dynamic Gait Energy Image
PDEI	Pose Difference Energy Image
SVR	Support Vector Regression
CCA	Canonical Correlation Analysis
HMMs	Hidden Markov Models
DTW	Dynamic Time Warping
CNN	Convolutional Neural Networks
GAN	Generative Adversarial Networks
MGAN	Multi-task Generative Adversarial Network
CMC	Cumulative Matching Characteristic
ReLU	Rectified Linear Unit
NN	Neural Network
RNN	Recurrent Neural Network

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