

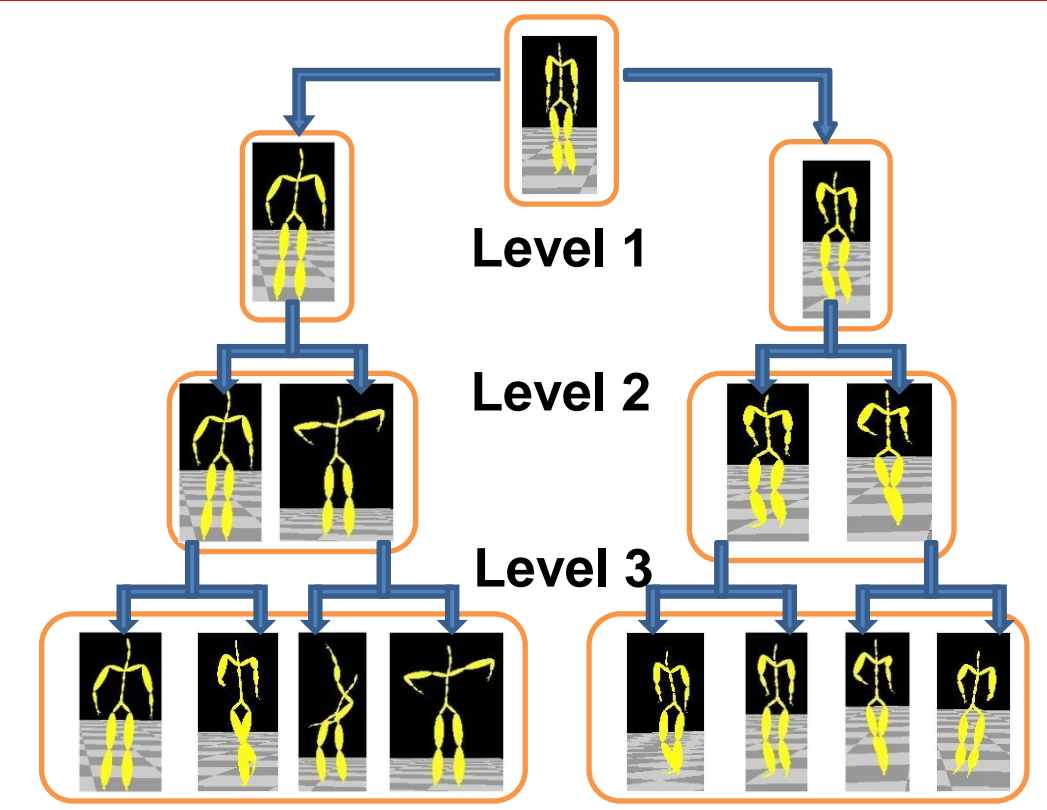
## Motivation

- Recent rapid developments of mocap systems have resulted in a large datasets of mocap sequences
- An automated annotation technique is needed to fully exploit these datasets

## Introduction

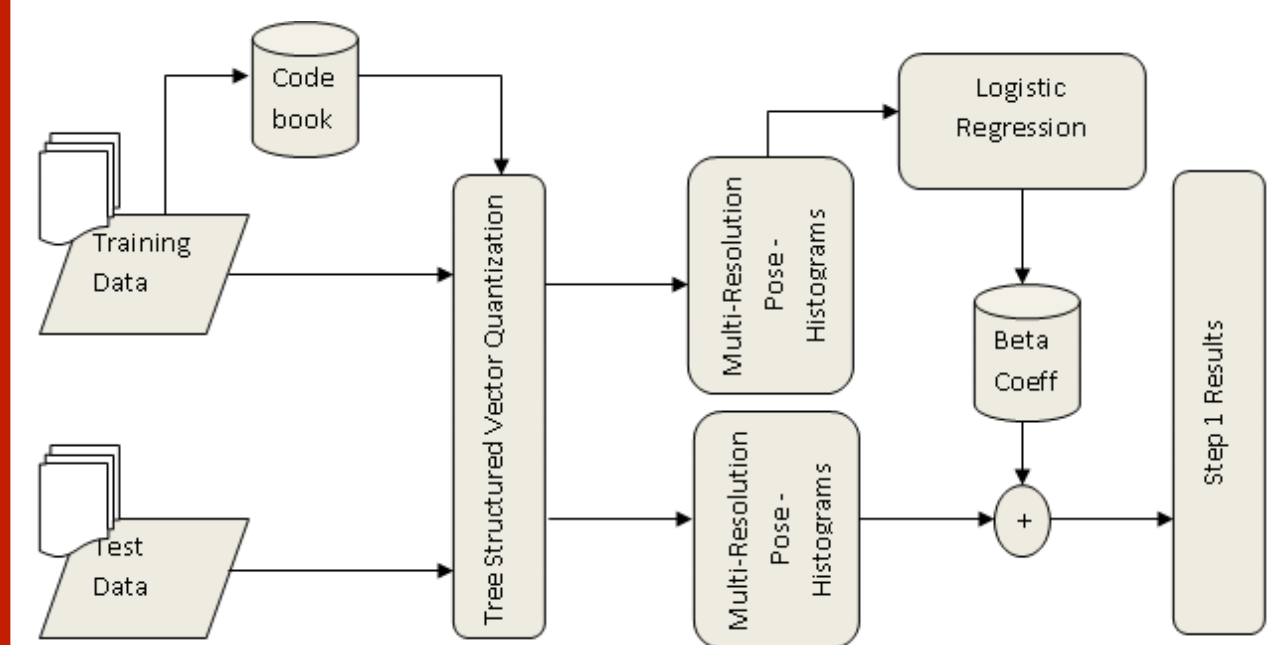
The tree structured vector quantization (TSVQ) method was adopted for

- 1) Pose Representation: to approximate human poses by codewords
- 2) Pose Sequence Representation: to model the dynamics of mocap sequences by a codeword sequence



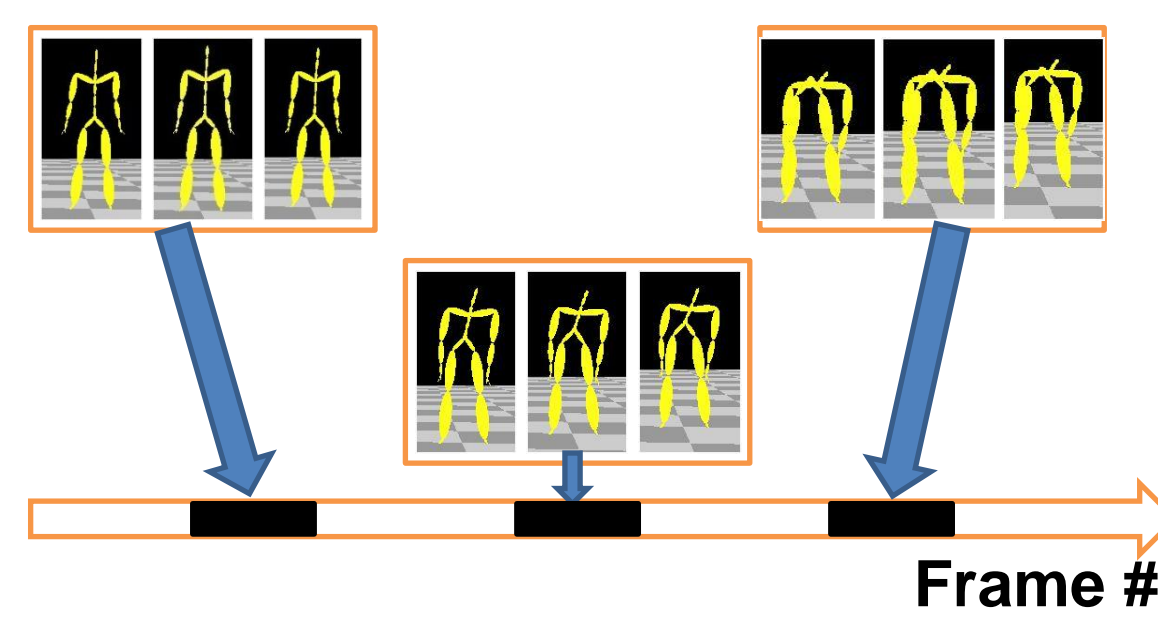
## Step 1

Spatial domain approach based on histogram of codewords



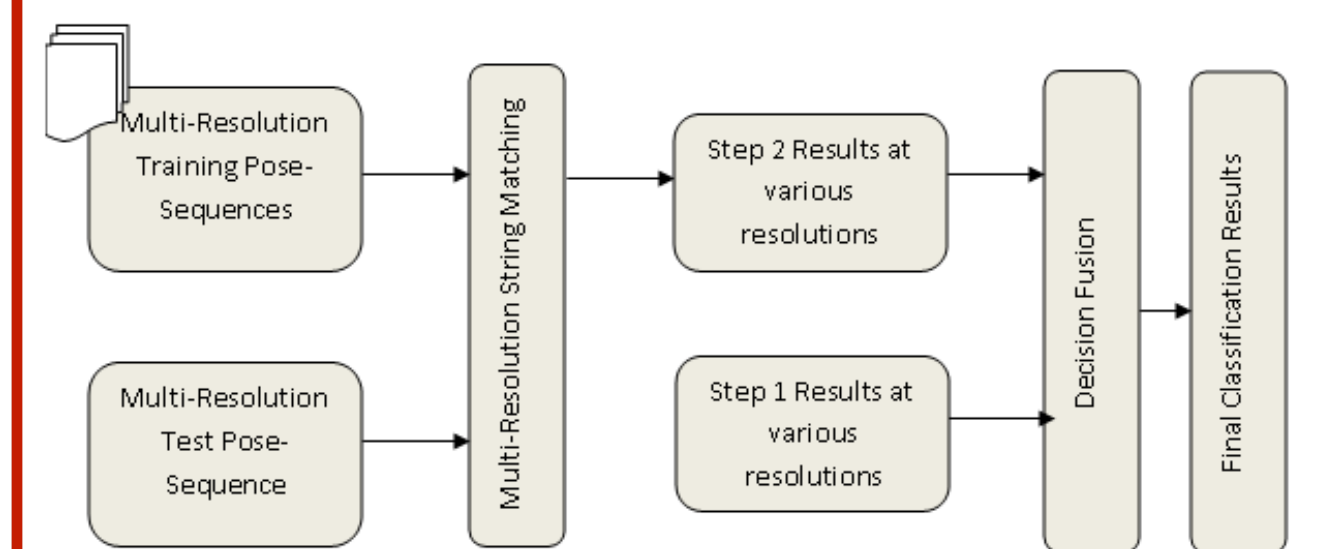
## Step 2

The spatial-time domain approach via codeword sequence matching



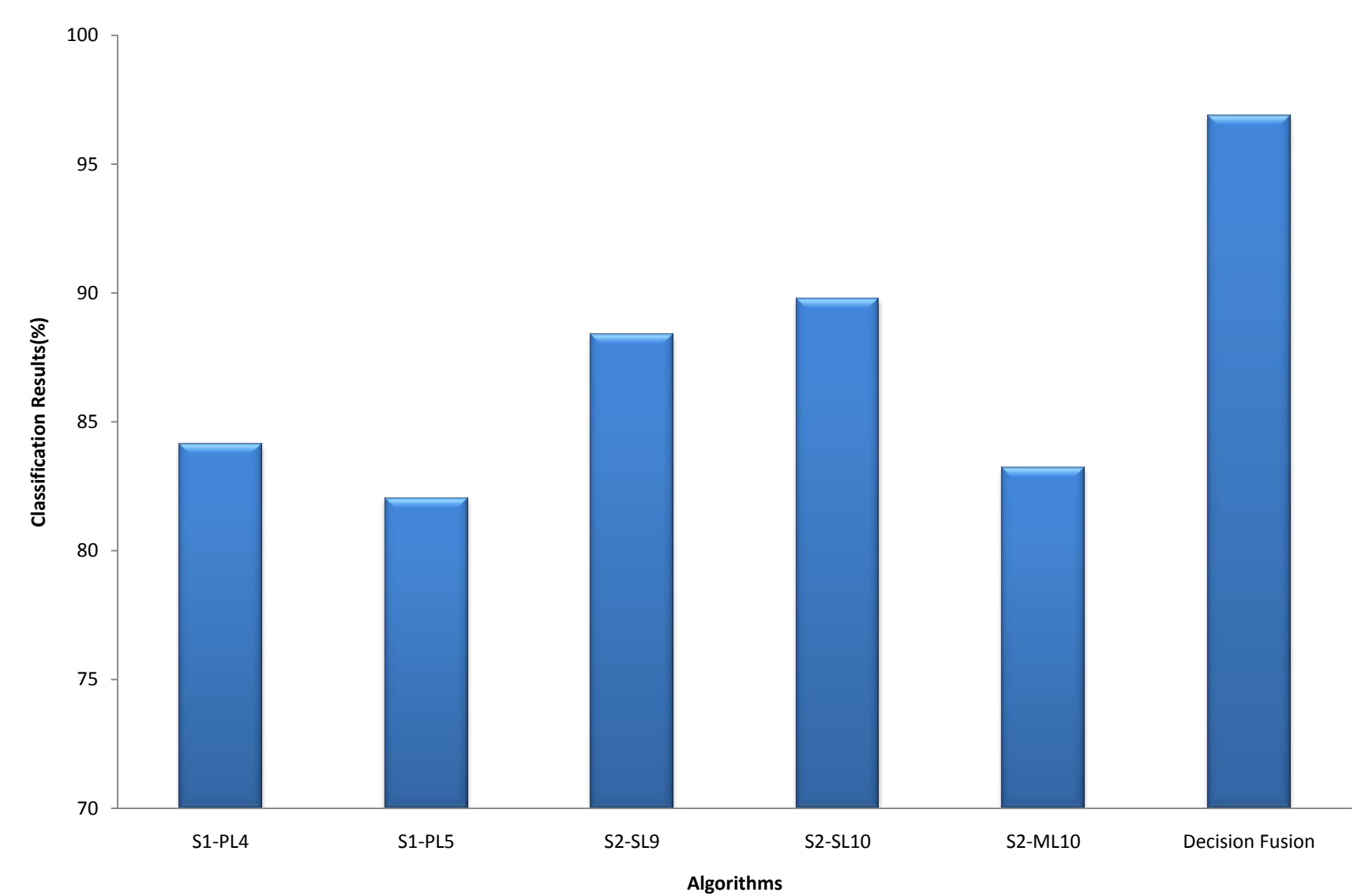
## Step 3

A decision fusion approach



## Observations and Future Work

- The proposed algorithm was tested on the CMU mocap database using n-fold cross validation procedure to obtain a correct classification rate of 97%
- As far as our knowledge goes, our algorithm is one of the best mocap data classification algorithms
- The framework can be extended to mocap data recognition, indexing and retrieval



## References

- 1] M. I. Abouelhoda, S. Kurtz, and E. Ohlebusch. Replacing suffix trees with enhanced suffix arrays. *J. of Discrete Algorithms*, 2(1):53–86, 2004.
- [2] Michelle Effros. Practical multi-resolution source coding: TSVQ revisited. In *Proceedings of the Data Compression Conference*, 1998.