

Per Channel Automatic Annotation of Sign Language Motion Capture Data

What ?

We propose to automatically segment and label sign language motion capture data by processing each channel separately. The annotation of two channels, hand configurations and facial expressions, are illustrated here.

Why ?

Whether we want to linguistically study and analyze sign languages or synthesize signed data utterances, an annotation is needed. However, manual annotation is a laborious and time-consuming task subject to inaccuracies. The difficulty of the annotation process is increased by the high number of linguistic channels that compose sign language data. We chose to process each channel independently in order to reduce the complexity of sign language annotation and corpus creation.

Annotation

Segmentation

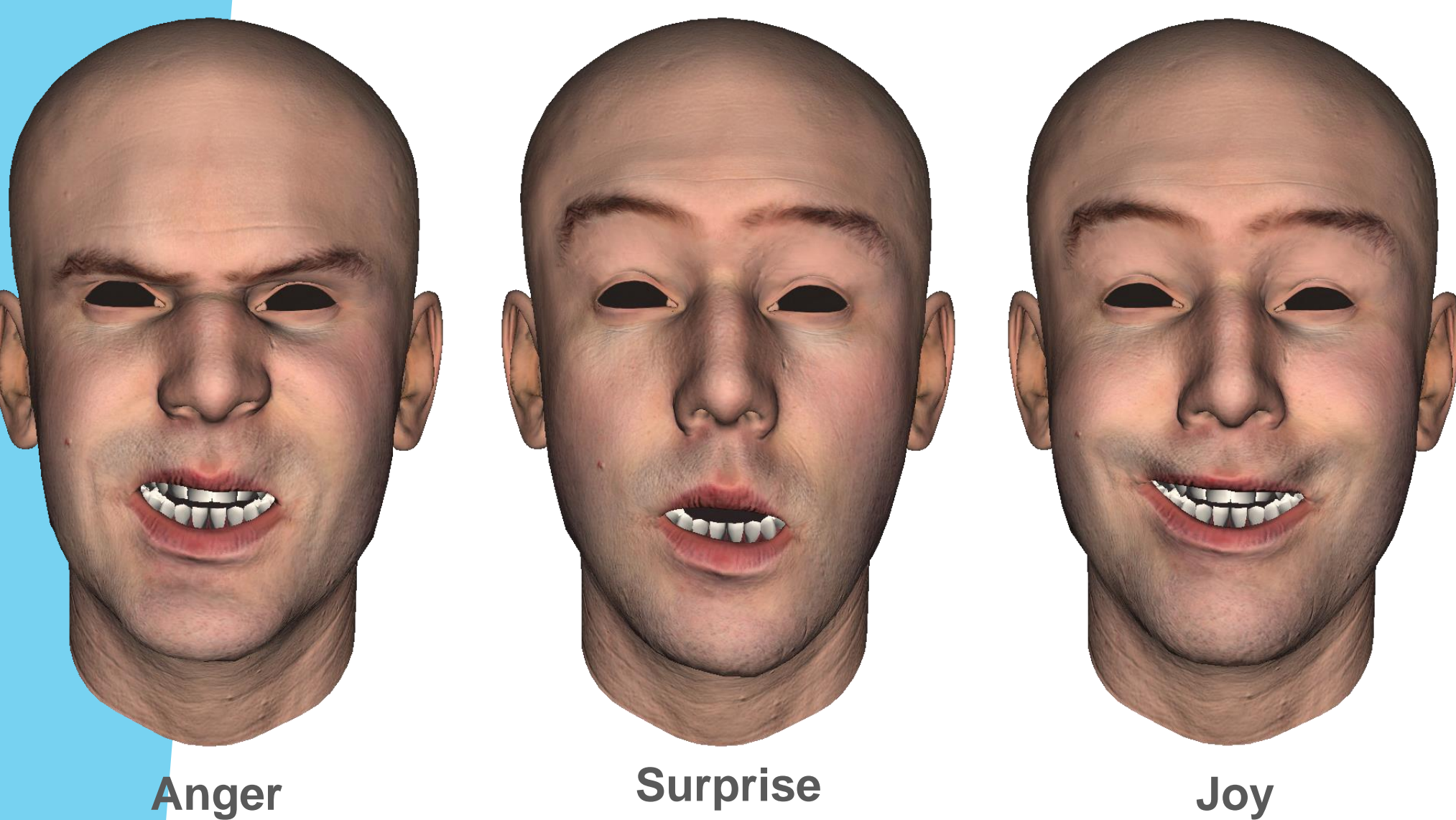
Division of the stream into segments of interest

Labeling

Identification of the segments

Facial Expression - Affect

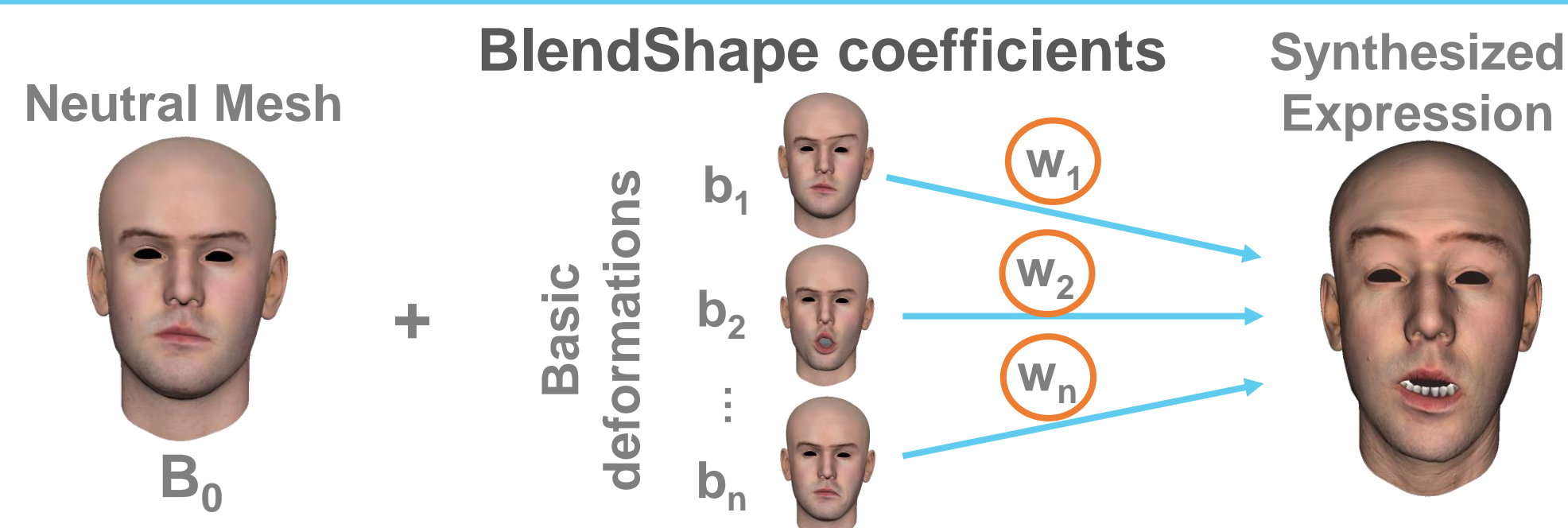
FEeL corpus (Expression team)



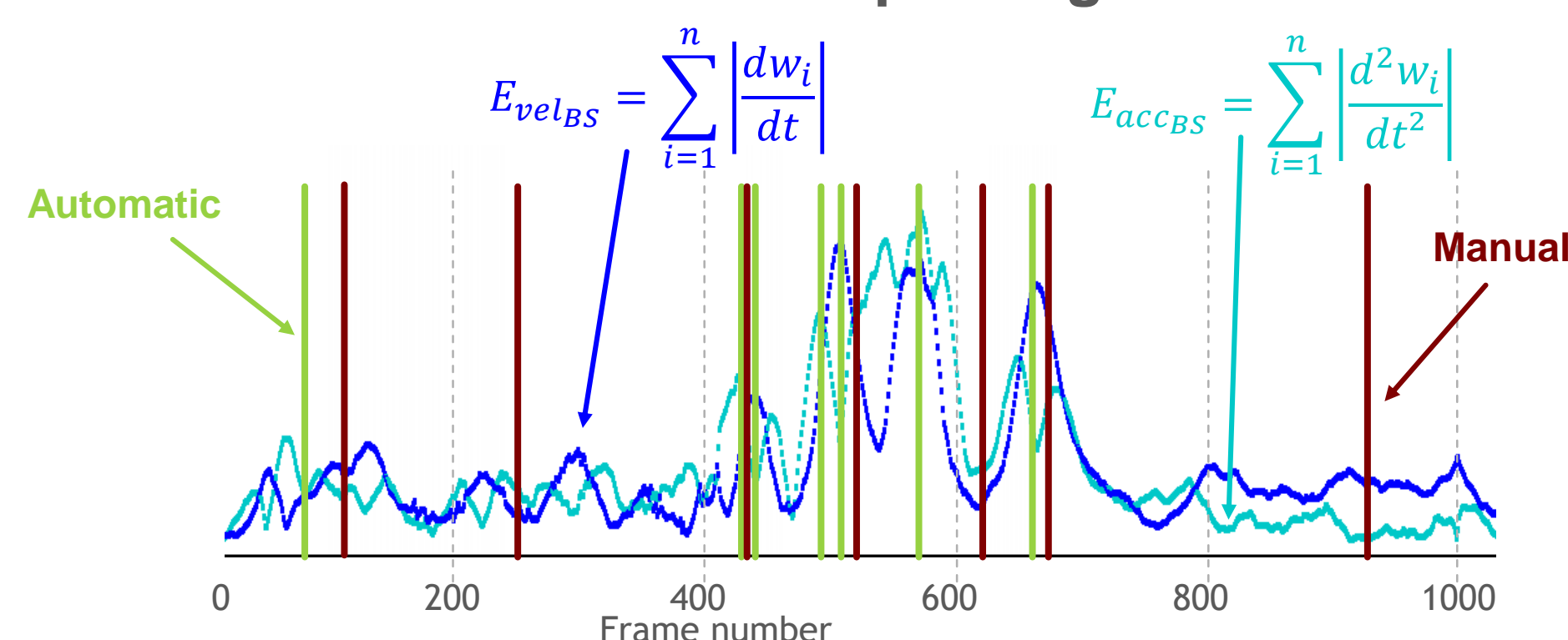
Anger

Surprise

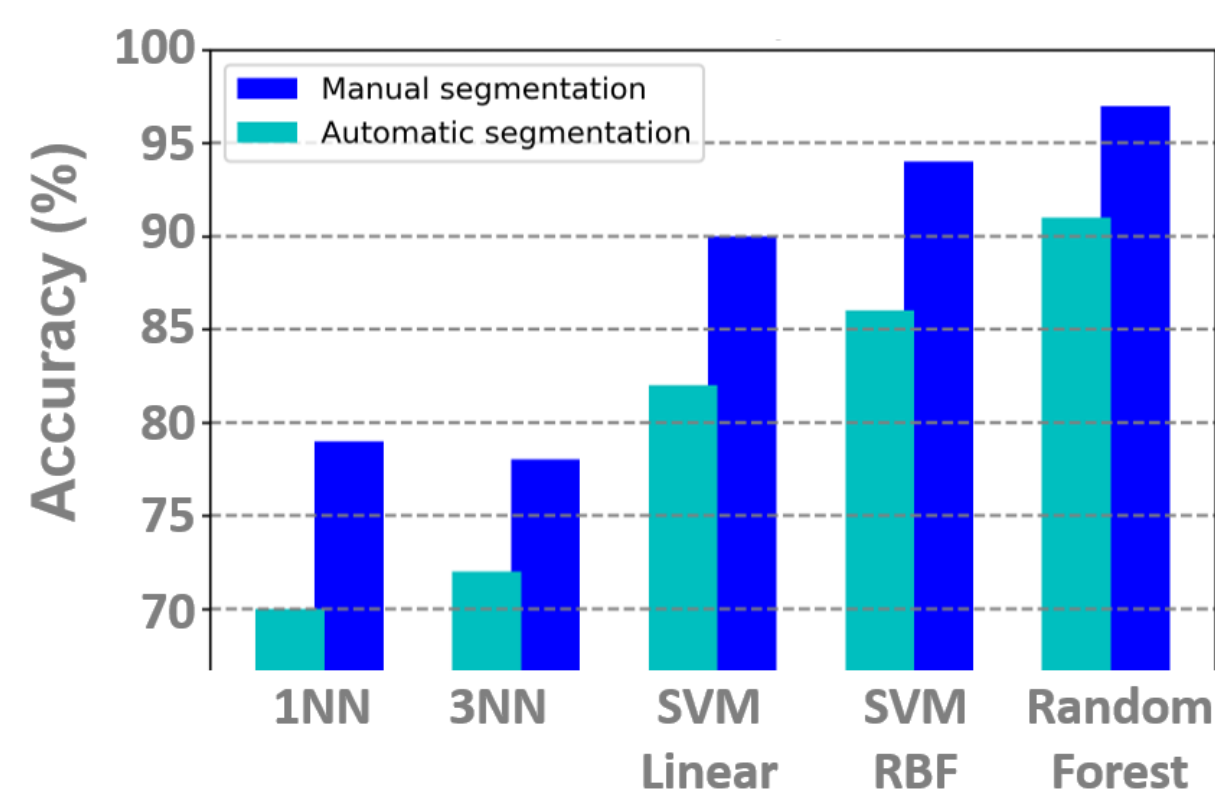
Joy



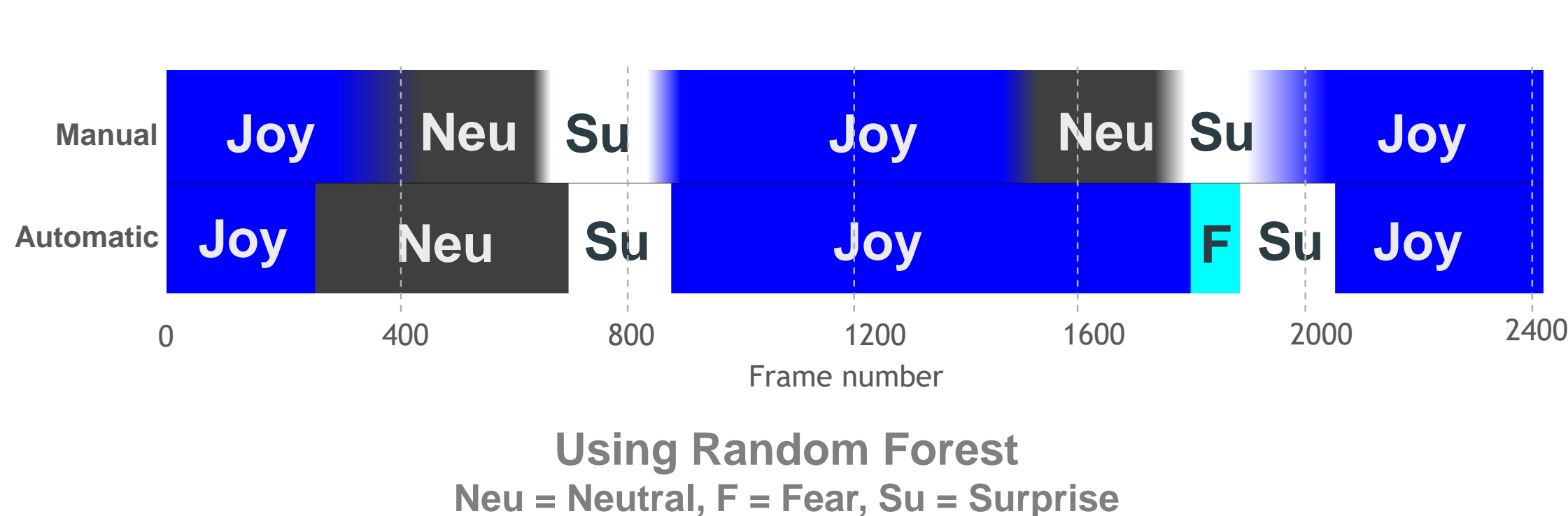
Detection of optima in the velocity and acceleration of BlendShape weights



Accuracy of the automatic labeling



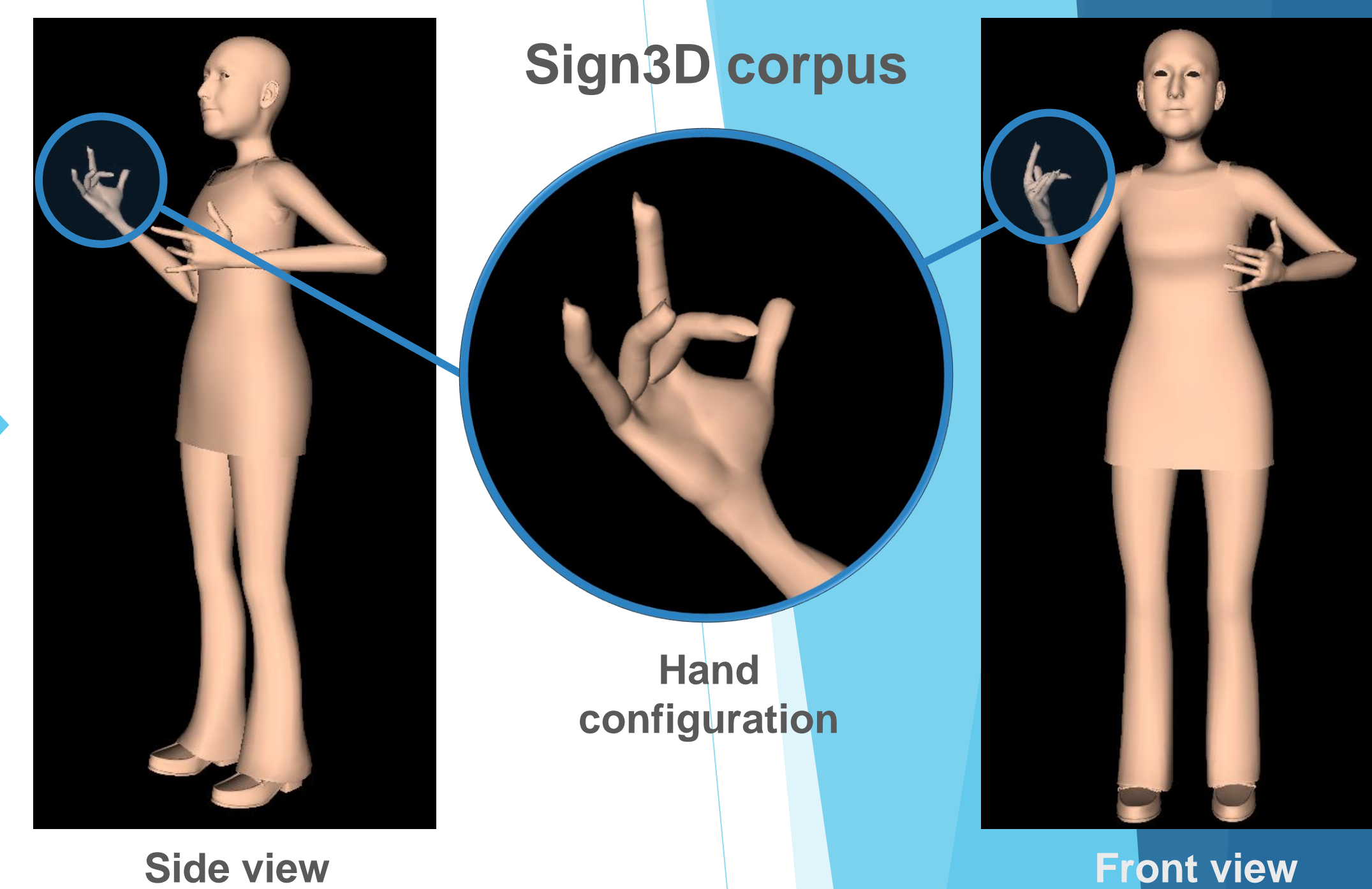
Results of the automatic annotation



Conclusion

The annotation results show that an automatic annotation per channel of motion capture sign language data is relevant. Further research on evaluation methods and on the annotation of other channels such as hand orientation and hand placement will be considered.

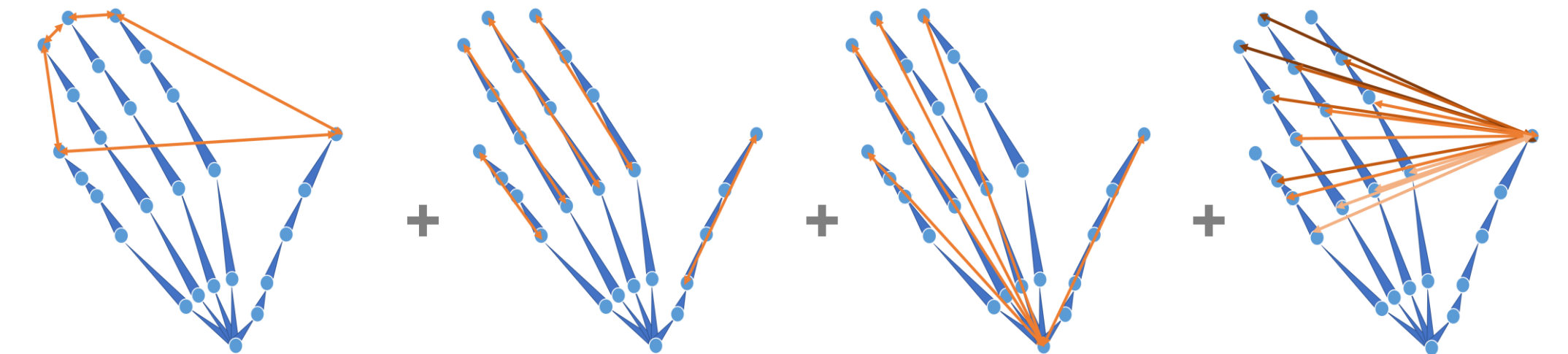
Hand Configuration



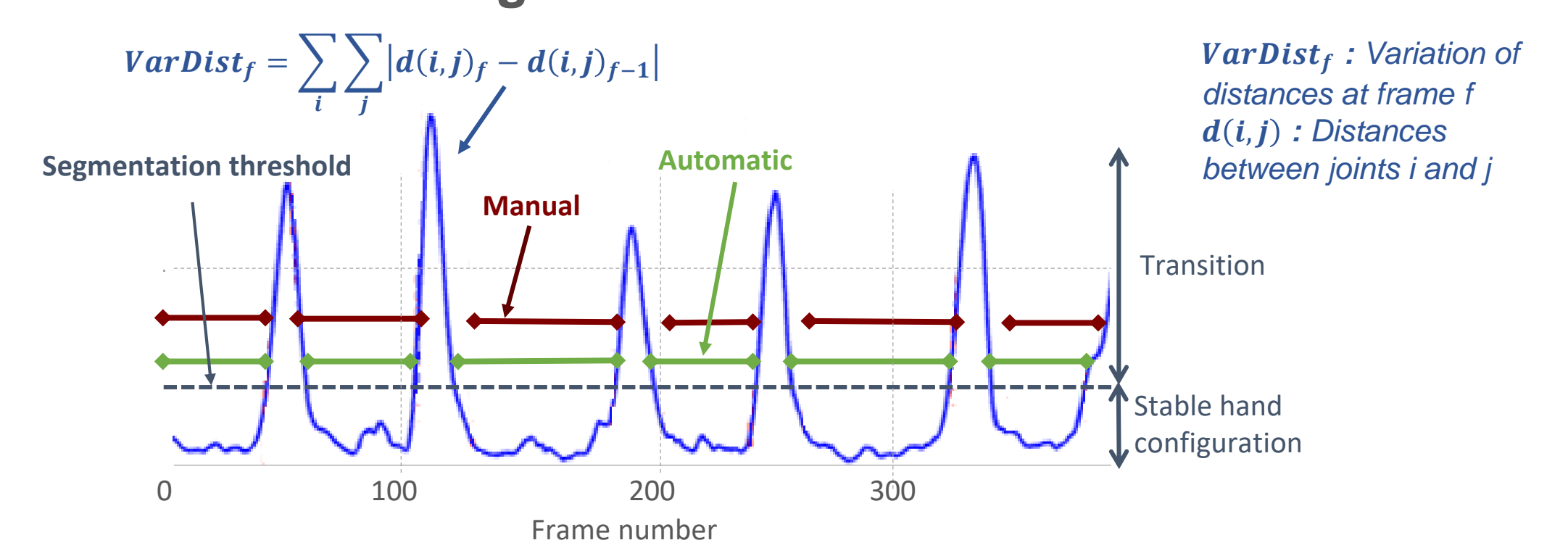
Side view

Front view

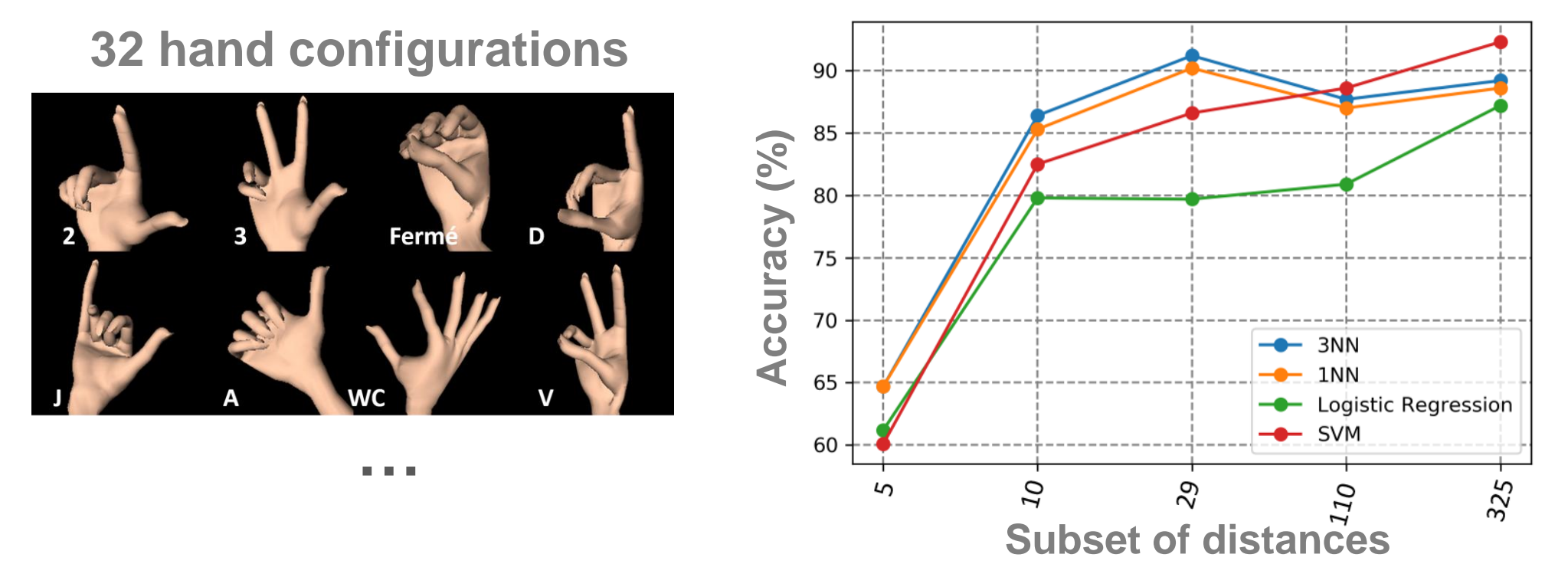
Distances between the joints of the hand



Segmentation of continuous signing using a segmentation threshold



Accuracy of the automatic labeling



Results of the automatic annotation

