

Handré: An Experimental Approach to Intelligent Character/Word Recognition using Support Vector Machines & Dynamic Time Warping

Sang Woo Jun
wjun@mit.edu

Chong-U
culim@mit.edu

December 4, 2011

1 Introduction

2 Segmentation

2.1 Word Segmentation

2.1.1 Time-series Segmentation

2.2 Character Segmentation

2.2.1 Supervised methods

Hand-labeled Training

2.2.2 Unsupervised methods

Pixel Analysis

2.2.3 Hybrid approach

Hand-labeled and Pixel Analysis

3 Recognition

3.1 Using Multi-class Support Vector Classifiers

3.2 K-means Clustering using Dynamic Time-Warping

3.3 Probabilistic Dictionary Word Modeling

3.4 Combining Approaches

4 Experiments

4.1 Multi-class Support SVCs

4.2 K-means Clustering using DTW

4.3 Combined Character recognition

4.4 Combined Word recognition

5 Analysis

5.1 Multi-class Support SVCs

5.2 K-means Clustering using DTW

5.3 Combined Character recognition

5.4 Combined Word recognition

6 Conclusions & Future Work

6.1 Conclusions

6.2 Future Work