Hand Printed Character Recognition using Splines

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Abstract. Automated handwriting detection remains an interesting yet challenging problem in the Vision field. Due to the curve-like nature of handwriting, it seems natural to consider approaches that directly model these curves. This project will investigate a particular approach from Hinton et. al [1] that uses an elastic model to recognize digits. Each digit class is represented by a cubic spline in an "ideal" configuration. To classify a test image, an iterative algorithm performs an elastic match between the test image and each digit model - the digit class with the best score wins. In addition, this project will investigate several extensions to the original model. Validation will be performed against the publically-available handwritten digit dataset, MNIST.

Keywords:

1 Introduction

2 Related Work

3 Methodology

4 Results and Discussion

5 Conclusion

References

[1] Geoffrey E. Hinton, Christopher K. I. Williams, and Michael Revow. Adaptive elastic models for hand-printed character recognition. In *ADVANCES IN NEURAL INFORMATION PROCESSING SYSTEMS*, pages 512–519. Morgan Kauffmann, 1992.