Hand Printed Character Recognition using Splines

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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 [Hinton et al. 1992] 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.

Categories and Subject Descriptors:

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