

1077-53-2155 **Susan B Crook*** (sbcrook@ncsu.edu). *Curve Matching via Discrete Invariants*. Preliminary report.

As a result of its use in medical imaging, aerial photography, and handwriting recognition, curve matching is a significant problem in the field of image analysis. Previous works propose integral invariants as a robust solution for the curve matching problem. However, these invariants rely on a parametric equation fit to the curve and in many real world applications, this fit requires a fair amount of computational work. We generate discrete invariants that require only an ordered set of points.

We apply our discrete invariants to the fields of image recognition and object assembly. In this talk, we present examples of curve matching used for handwriting recognition and puzzle completion. (Received September 21, 2011)