

1123-00-49

Cheri Shakiban* (cshakiban@stthomas.edu). *Applications of Signature curves in Computer Vision.*

In this talk, we focus on the application of an Euclidean invariant curve, called the *signature curve*, formed by taking curvature and derivative of curvature with respect to arc length of a closed curve, $\Sigma = \{(\kappa(t), \kappa_s(t))\}$ to characterize the contour of melanomas and moles. We will then introduce another invariant curve called the *space signature curve* by bringing torsion $\tau(t)$ into the equation, $\Sigma = \{(\kappa(t), \kappa_s(t), \tau(t))\}$ for 3D closed curves and apply it to analyze circular DNA models. Finally, we will introduce the *skeletal signature curve* which is a new method we are investigating for charactering and identifying surfaces in 3D. (Received August 10, 2016)