

Dear Faculty, IGERT Fellows, IGERT Associates and Students,

You are cordially invited to attend a Seminar presented by Ben Guan. Please plan to attend.

Ben Guan

IGERT Fellow
Electrical Engineering

Date: Friday, November 1, 2013

Location: Bourns A265

Time: 11:00am

Bio-Optimized Segmentation of Blebs in Human Embryonic Stem Cell Videos

Abstract:

This paper proposes a bio-optimized region growing method for human embryonic stem cell (hESC) bleb segmentation in videos. The bleb formation consists of bleb expansion and bleb retraction processes. The method uses dynamic similarity threshold in region growing for bleb detection in both processes instead of a fixed threshold. The dynamic similarity threshold is found with an optimization metric. The optimization metric is derived from the bleb expansion and retraction processes' area change statistics over time. The optimization metric parameters are learned separately from both processes by curve fitting the bleb area distributions over time. Since the rates of area change are different in expansion and retraction processes, two models are used in the optimization metric. The proposed method provides a fast and simple way to analyze sequence of expansion and retraction processes.

Thank you,