NOTICE OF THESIS PROPOSAL PRESENTATION

Geodesy and Geomatics Engineering

Doctor of Philosophy

Aditya Roshan

Tuesday, July 22, 2014 @ 1:30 pm
Head Hall – ADI Studio, C-25

Supervisor:	Dr. Yun Zhang, Geodesy and Geomatics Engineering
Supervisory Committee:	Dr. David Coleman, Geodesy and Geomatics Engineering
	Dr. Emmanuel Stefanakis, Geodesy and Geomatics Eng'g
Chair:	Dr. Monica Wachowicz, Geodesy and Geomatics Eng'g

Real-Time Enhanced Moving Object Detection in Security Camera and Reference Independent Image/Video Quality Computation

ABSTRACT

Triple sensitive camera project is equipped with a low resolution color camera, a high resolution panchromatic camera and a processing unit. Processing unit fuse the color and panchromatic videos using UNB PanSharp Image Fusion technique and output high resolution color video. In addition to video fusion, processing unit also process the videos to detect, track and calculate 3D position of moving objects present in video. Moving object detection, tracking and 3D position calculation plays an important role for site/scene monitoring in security, traffic and military. In literature, there exist many methods for moving object detection which are limited by scene complexity, lightning condition, resolution, processing speed etc. A robust method of moving object will be developed during this research which can detect, track and calculate 3D position of moving object in real-time and under all limiting conditions. This will be achieved by implementing improved moving object techniques.

A high resolution color image is obtained by fusing low resolution color and high resolution panchromatic images. After a visual inspection it is observed that high resolution fused color image is better than other images. Some statistical methods based on image pixel values have shown it but different human eyes perceive color differently and they may not agree with statistical results. Hence, other part of this research will be focused on determination normalized image quality index. The quality of an independent image can be represented by this index. Human eye response will be modelled for different parameters of standard images. These models will be used to compute an index representing quality of a fused as well as any other image.

Faculty Members and Graduate Students are invited to attend the 20 minute presentation