



**NOTICE OF
UNIVERSITY ORAL**
GEODESY AND GEOMATICS ENGINEERING

Master of Science in Engineering

Ge Guo

Friday, August 29, 2014 @ 2:30 pm

Head Hall – ADI Studio (HC25)

**Board of Examiners: Co-Supervisors: Dr. Yun Zhang, Geodesy & Geomatics Eng.
Dr. Mary Kaye, Electrical & Computer Eng.
Examining Board: Dr. Raid Al-Tahir, Geodesy & Geomatics Eng.
Dr. Julian Meng, Electrical & Computer Eng.
Dr. Eduardo C. Guerra, Electrical & Computer Eng.
Chair: Dr. Emmaunel Stefanakis, Geodesy & Geomatics Eng.**

**ENHANCED GAUSSIAN BACKGROUND MODELING ALGORITHM AND
IMPLEMENTATION IN FPGA FOR REAL-TIME MOVING OBJECT DETECTION IN
SURVEILLANCE VIDEO**

ABSTRACT

A real-time solution of moving object detection (MOD) in surveillance video was explored in this work motivated by the practical need of real-time automated video analysis system. The core element of a moving object detection process is its background modeling algorithm in the content of surveillance and road monitoring applications. By reviewing and analyzing previous works, single Gaussian (SG) background modeling algorithm was selected and enhanced. Then a circuit that performs MOD with enhanced SG algorithm was designed and implemented in a Virtex6 FPGA of a ML605 evaluation board with other hardware components. The experiment results showed that the proposed MOD system could perform real-time MOD in a video of 1280×720p@30fps. It outperforms the software experiments/implementations and the state-of-art FPGA-based implementations.

Faculty Members and Graduate Students are invited to attend this presentation.