SE&T Colloquium Series-Fall 2013

Speakers	Dr. Tai-Chi Lee and Mr. Mark White Department of Computer Science and Information Systems
Title	***FPGA-Based Computing Platform: For Computationally Intensive Applications***
Abstract	The future of computing is unavoidably parallel, involving a hybrid set of technologies to continue to deliver improved application performance. As clock speeds for affordable traditional single processor designs have leveled off due to economic and physical constraints, new innovative designs involving multiple CPU cores and reconfigurable multi-processors are emerging. Our research project has been examining the process of building a network of multiprocessors using a number of FPGA's (Field Programmable Gate Arrays), which can be reconfigured from application to application by a program under a control unit. The FPGA multiprocessor network is a low cost architecture, but provides a great computing power, especially for applications where parallel and/or intensive computations are required. However, the reconfigurability is a challenging task with some subtle issues which have not been completely resolved, at least not in a general computing platform. Recently, we have investigated such an implementation by making use of the NIOS II or Xilinx embedded processor, custom instructions, adaptive compilation, along with software/hardware co-design techniques to rapidly build and prototype the computational algorithms . The preliminary results have shown to be very promising. While we are developing an FPGA-Based computing platform to improve the system performance for computationally intensive applications, our ultimate goal is to support the faculty/student research here at SVSU by providing the computing powers needed in various fields of research including, but not limited to, computational mathematics, computational physics, computational chemistry, computational biology, and engineering problems as well, thereby promoting the undergraduate research at SVSU. It is our hope that this can be achieved with faculty/students' active participation in the use of this computing platform.
Date	Tuesday, November 12
Time	4:10-5:00pm
Place	Pioneer 240
	Refreshments will be served at 4:00pm.