

*The Electrical and Computer Engineering Program presents
ECEN Seminar Series*

Exploiting FPGA DSP Blocks for More Than DSP

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A recent trend has seen FPGAs gain a variety of hard blocks. These offer improved performance and energy for regularly used operations. DSP blocks were added to FPGAs, over the last few generations of devices, to help accelerate filters and other multiply-accumulate type operations. In the most recent devices from Xilinx, the DSP48E1 primitive is highly configurable, on a cycle-by-cycle basis, and can perform a wide variety of operations. This talk will present the iDEA soft processor built around a DSP block, as well as discuss other novel ways to exploit such resources.



Suhaib Fahmy is an Assistant Professor in the School of Computer Engineering at Nanyang Technological University. His research is broadly within the area of reconfigurable computing and hardware design, across a range of application domains, including wireless communications, computer vision, and automotive systems. Dr. Fahmy graduated from Imperial College London in 2003 with a First Class Honours MEng in Information Systems Engineering, and in 2007 with a PhD in Electrical and Electronic Engineering. From 2007 to 2009, he was a Postdoctoral Research Fellow at CTVR, Trinity College Dublin and Visiting Research Engineer at Xilinx Research Labs, Ireland, working on adaptive architectures for cognitive and software-defined radio. Dr. Fahmy serves on the technical program committees for a number of conferences in the area of reconfigurable computing, and actively reviews for many journals in the area. He is a Senior Member of the IEEE, and Member of the ACM.

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