Electrical and Computer Engineering Departmental Seminar:
Programmable Hardware and Search Engines in Software Defined Networking

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ABSTRACT
Existing Software Defined Networking (SDN) approaches employ fixed hardware architecture and open software layer. However, it is highly desirable for the hardware to have the programmability capability that is accessible to the network operator and user. In this talk, I will describe research on using programmable hardware, specifically the FPGA, for high performance packet processing with a high level programming model. I will then discuss memory efficient algorithms and data structures used in search engines that can be integrated into the packet processing system.

Speaker Bio
Hoang Le received his BS (2005) and MS (2007) in Computer Engineering from George Mason University, MS (2010) in Electrical Engineering, and Ph.D (2011) in Computer Engineering from the University of Southern California. He is currently a Staff Design Engineer at Xilinx, San Jose, California. His research includes: Network (Software defined Network, High Level Simulation, Cyber Security, Traffic Classification, High Speed Routers, Virtualization); Extreme scale systems/architectures (Abstract Machine Models, Task Parallelism/Scheduler, Software/Hardware Codesign, Asynchronous Computation, Multilevel Memory Systems, Fast Memory Structures; Hardware security (Secure Embedded Systems, Cryptographic Hardware); Computer vision (Image Processing, Object Detection and Tracking); Cognitive systems (Bayesian networks, Neural networks).