Data Triggered Threads -- Eliminating Redundant Computation

This talk will introduce a new programming/architectural execution model for parallel threads. Unlike threads in conventional programming models, data-triggered threads are initiated on a change to a memory location. This enables increased parallelism and the elimination of redundant, unnecessary computation. This talk will focus primarily on the latter. Professor Tullsen will show that 78% of all loads fetch redundant data, leading to a high incidence of redundant computation. By expressing computation through data-triggered threads, that computation is executed once when the data changes and is skipped whenever the data does not change. The set of C SPEC benchmarks show performance speedup of up to 5.9X and averaging 46%.

ECE Colloquium Series

For more information: www.bu.edu/ece/calendar