



UNIVERSITY OF  
**GEORGIA**  
College of Engineering

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**Lecture  
Series**



**Krishna Kavi, Ph.D.**

University of North Texas

## *Computer Systems Research at the University of North Texas*

### **ABSTRACT**

This talk focuses on several related research projects that aim to improve the performance of HPC, Cloud and emerging Big Data applications. It is an understatement to say that the performance of multicore systems is limited by their memory systems' performance. Our research has developed both hardware and software solutions to improve the performance of cache memories, and how new memory technologies such as 3D stacked DRAMs, Phase Change Memories can be included in the memory hierarchies. Software solutions include profiling of data access patterns, relocating data, and restructuring code to improve performance. Hardware solutions include heterogeneous memories that are built using different memory technologies, and near data processing (also known as processing in memory or PIMs). We are evaluating different architectures, including dataflow, coarse grained reconfigurable systems, GPUs and simple in-order RISC processors as PIM elements.

### **BIOGRAPHY**

Dr. Krishna Kavi is currently a Professor of Computer Science and Engineering at the University of North Texas and the Director of the NSF Industry/University Cooperative Research Center for Net-Centric and Cloud Software and Systems. The center includes more than 20 industrial members and four academic institutions. During 2001-2009, he served as the Chair of CSE department at UNT. Prior to joining UNT, he held an Endowed Chair Professorship in Computer Engineering at the University of Alabama in Huntsville, and served on the faculty of the University Texas at Arlington. He was a NSF program manager between 1993-1995. He published nearly 200 technical papers, received more than \$9 million in extramural funding and graduated 15 Ph.D.s and more than 40 MS students. He received his BS in Electrical from the Indian Institute of Science and PhD from Southern Methodist University.

**FRIDAY  
NOVEMBER 3, 2017**

**NOON - 1:30 P.M.**

**COVERDELL CENTER  
AUDITORIUM  
(Room 175)**