UMass Lowell
Computer Science Colloquium
Announcement

Speaker: Prof. Stan Zdonik, Brown University
Date & Time: Wednesday, Apr. 23, 2008, 3:00pm--4:00pm
Place: Olsen 311, Refreshments are served at 2:45pm

Special-Purpose Data Management and Automatic Design

Modern technology has made it possible to collect and maintain vast amounts of data. This data is of many different forms, and different applications use it in widely varying ways. Example applications include high-speed stock-ticker processing, massive data warehouses, OLTP, and scientific databases. At the same time, the performance requirements for many of these applications have escalated dramatically. Luckily, the hardware community has increased the available cycles by giving us highly parallel computing platforms as can be seen by the emergence of cheap multi-node clusters and multi-core processors. It is not a simple task, though, to build a data management system that can properly harness this extra horsepower. The proper solution is dependent on the specific hardware and software architectures and on the characteristics of new workloads.

In this talk, we will discuss evidence that the era of a single monolithic solution to the world’s data management needs is over. A single architecture cannot deliver the high-performance of specialized approaches. Over the last five years, we have been engaged in several efforts to build special-purpose platforms that can address these modern trends. In this talk, we will describe a couple of these systems. We will also show that in order to achieve the best performance from these systems, a workload-specific physical design is necessary. Given the complexity of such a physical design, it is more and more difficult for a human DBA to produce it. For this reason, we will pay special attention to the problem of automatic physical design in each of the settings and will argue that there are plenty of interesting new research questions lurking there.

Bio:

Dr. Stan Zdonik is a Professor of Computer Science at Brown University where he has led the Advanced Data Management Research Group since 1983. He and his team have been involved in a diverse set of topics including object-oriented database systems, semantic query optimization, transaction management, network information systems, data management for mobile systems, data dissemination, data warehousing and stream processing. He is an ACM Fellow and is a current member of the VLDB Endowment. He has been Program Chair for both the VLDB and the ICDE database conferences and is the co-chair for SIGMOD 2009 which will be held in Providence. He is a co-founder of both Streambase, Inc. and Vertica, Inc., two high-tech ventures in the Boston area.

Colloquium Coordinator: Cindy Chen, cchen@cs.uml.edu, Website: http://www.cs.uml.edu/~cchen/colloquia/