THE UNIVERSITY OF CHICAGO

Computer Science Department

# CERES UNSTOPPABLE SPEAKER SERIES

## Donald Kossmann

Principle Researcher at Microsoft Research

## October 6, 3:00 pm, Ryerson 251

## "Concerto: A High-concurrency Key-value Store with Integrity"

*Abstract:*

The problem of designing a database systems with integrity has been studied for more than two decades. The goal of all this work is to ensure, using cryptographic methods, that unauthorized and potentially malicious users cannot change the state of a database. Traditional approaches employ Merkle trees. Unfortunately, this technique has poor performance, at best on the order of thousands of operations per second. This talk shows how to implement an integrity-protected key-value store that can handle millions of operations per second. The approach is based on a trusted computing platform protocol that periodically verifies the integrity of the database. One of the key features of this approach, as opposed to any existing approach, is that it supports a high degree of concurrency and allows parallel integrity verification.

*Bio:*

Donald Kossmann is a principle researcher at Microsoft Research. He is currently on leave from ETH Zurich where he is a professor of Computer Science. He received his MSc in 1991 from the University of Karlsruhe and completed his PhD in 1995 at the Technical University of Aachen. He is an ACM Fellow and the Chair of ACM SIGMOD. He was a co-founder of three start-ups in the areas of Web data management and cloud computing.

CERES
Center for Unstoppable Computing

**The talk is at 3:00pm, Thursday, October 6, Ryerson 251**

**Refreshments after talk, Ryerson 255**

**Host: Michael Franklin**

**Contact: 773-702-3508**

**http://www.cs.uchicago.edu/events**