



Department of Computer Science and Engineering

*Presents*

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**Title: Practical Network Coding: 2002 - ?**

In the June 2007 issue of the Scientific American magazine, network coding has been touted as an approach that could dramatically and fundamentally enhance the efficiency and reliability of communication networks. In this talk, I will present a retrospective view of research advances towards practical network coding since 2002, with a focus on a small number of practical challenges, their corresponding theoretical solutions, and practical limitations in these theoretical solutions. I will then discuss highlights of the lessons learned in the first production deployment of random network coding, where it has been used in the past three years as the cornerstone of a large-scale production on-demand streaming system, operated by UUSee Inc., delivering thousands of on-demand video channels to millions of unique visitors each month. I will conclude with a preview of our ongoing work, and discuss whether network coding should be used in the context of our work.

**Bio:** Baochun Li received his B.Engr. degree in 1995 from Department of Computer Science and Technology, Tsinghua University, China, and his M.S. and Ph.D. degrees in 1997 and 2000 from the Department of Computer Science, University of Illinois at Urbana-Champaign. Since 2000, he has been with the Department of Electrical and Computer Engineering at the University of Toronto, where he is currently a Full Professor. He holds the Bell University Laboratories Endowed Chair in Computer Engineering since August 2005. In 2000, he was the recipient of the IEEE Communications Society Leonard G. Abraham Award in the Field of Communications Systems. In 2009, he was a recipient of the Multimedia Communications Best Paper Award from the IEEE Communications Society, and a recipient of the University of Toronto McLean Award. His research interests include large-scale multimedia systems, peer-to-peer networks, applications of network coding, and wireless networks. He is a senior member of IEEE, and a member of ACM.

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**University at Buffalo – North Campus – Clemens 120**

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