



香港中文大學
The Chinese University of Hong Kong

Institute of Theoretical Computer Science and Communications

ITCSC Seminar

**Multiple access for the collision channel without
feedback deterministic vs random**

By

Dr. Kenneth Shum

Research Fellow, INC, CUHK

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4:30 pm – 5:30 pm

Rm. 121, 1/F., Ho Sin Hang Engineering Building, CUHK

Abstract:

The collision channel without feedback is a simple channel accessing model, applicable to computationally limited system such as wireless sensor networks. In such systems, no coordination and communication is required among the transmitting nodes. The design objectives include high throughput, short delay, and some non-blocking properties. In classical random accessing scheme such as slotted ALOHA, a transmitting node sends a packet in a time slot with some probability, independent of what the other transmitting nodes are doing. In practice, random number generator used in the random accessing scheme is replaced by some pseudo-random number generator. In this talk, we show that if the pseudo-random number generator are designed in some special way, the performance can in fact be better than that attained by random access.

Biography:

Kenneth Shum received the B.Eng. degree in Information Engineering from the Chinese University of Hong Kong, and the M.S. and Ph.D. degree in Electrical Engineering from University of Southern California respectively. He was a post-doctoral fellow in University of Toronto and City University of Hong Kong, and is now a research fellow in the Institute of Network Coding, the Chinese University of Hong Kong. His research interests include information theory, coding theory and cooperative communications.

***** ALL ARE WELCOME *****

Hosted by: Prof. Chandra Nair Tel: 3163 8467

Enquiries : Institute of Theoretical Computer Science and Communications Tel: 2696 1257