香港浸會大學理學院
HKBU Faculty of Science

for favour of posting

DEPARTMENT OF COMPUTER SCIENCE

<u>MPhil Degree Oral Presentation</u>

MPhil Candidate:	Mr Yong YAN
Supervisor:	Dr Xiaowen CHU
External Examiner:	Prof Kun YANG
Time:	7 July 2010 (Wednesday) 5:00 pm – 7:00 pm (35 mins presentation and 15 mins Q & A)
Venue:	T909, Cha Chi Ming Science Tower, HSH Campus

"Performance Analysis and Improvement of IEEE 802.11 Protocols"

Abstract

With the rapid expansion of wireless network coverage, IEEE 802.11 based wireless services have brought convenience to our everyday life. Along with the adoption of WiFi networks in most of public areas, there comes the issue of network performance degradation as the number of users in the same area increases. The coexistence of more wireless stations always leads to slower network speed because of channel competition and interference.

In this thesis, we first study the experimental results of TCP/UDP performance of IEEE 802.11b/g, addressing the issue that internal UDP traffic has heavy impact to TCP traffic, and then we propose schemes to improve TCP throughput by a little modifications to the existing IEEE 802.11 protocols.

On the theoretical side, we analyze the IEEE 802.11 protocol performance by our newly proposed markov model, which is verified by both simulation and analytical results; and in addition, it is also in accordance with our experimental results.

At last, we study and analyze the QoS feature of IEEE 802.11e, and conduct simulations to verify a new scheme that aims to adapt more traffic flows while guaranteeing each flow's QoS requirements. Finally, our even-driven simulations have been done and results are presented to demonstrate the effectiveness of this statistical multiplexing scheme.

*** ALL INTERESTED ARE WELCOME***