

# Storage-Retrieval-Repair Cost Tradeoff in Network Coded Distributed Storage Systems

**SPEAKER Prof Dapeng Oliver WU**

Professor  
Department of Electrical & Computer Engineering  
University of Florida  
USA

**DATE** 10 July 2017 (Monday)

**TIME** 3:00 pm - 4:00 pm

**VENUE** CS Seminar Room, Y6405  
6th Floor, Yellow Zone  
Yeung Kin Man Academic Building  
City University of Hong Kong  
83 Tat Chee Avenue  
Kowloon Tong

## ABSTRACT

Cloud storage has become a main stream for data storage and backup for anytime/anywhere access, and will also very likely become the platform for hundreds of thousands of Internet TV stations. There are three main coding schemes for cloud/distributed storage systems, namely, repetition coding (simple duplication), Reed-Solomon codes, and network coding (regenerating codes). The performance of these coding schemes is measured by storage cost and repair cost (the cost of recovering the data in a failed disk). However, the retrieval cost (the cost of retrieving a specific segment of a file rather than the whole file) is a major concern in practice (especially for streaming video) but has been largely ignored. In this talk, I will present our theory on three dimensional tradeoff among storage cost, retrieval cost and repair cost. The proposed theory is expected to lay out important foundation for the design of next generation cloud/distributed storage systems.

## BIOGRAPHY

Dapeng Oliver Wu received Ph.D. in Electrical and Computer Engineering from Carnegie Mellon University, Pittsburgh, PA, in 2003. Since 2003, he has been on the faculty of Electrical and Computer Engineering Department at University of Florida, Gainesville, FL, where he is currently Professor. His research interests are in the areas of networking, communications, video coding, image processing, computer vision, signal processing, and machine learning.

He received University of Florida Term Professorship Award in 2017, University of Florida Research Foundation Professorship Award in 2009, AFOSR Young Investigator Program (YIP) Award in 2009, ONR Young Investigator Program (YIP) Award in 2008, NSF CAREER award in 2007, the IEEE Circuits and Systems for Video Technology (CSVT) Transactions Best Paper Award for Year 2001, the Best Paper Award in GLOBECOM 2011, and the Best Paper Award in QShine 2006. Currently, he serves as Editor-in-Chief of IEEE Transactions on Network Science and Engineering, and Associate Editor of IEEE Transactions on Communications, IEEE Transactions on Signal and Information Processing over Networks, and IEEE Signal Processing Magazine. He was the founding Editor-in-Chief of Journal of Advances in Multimedia between 2006 and 2008, and an Associate Editor for IEEE Transactions on Circuits and Systems for Video Technology, IEEE Transactions on Wireless Communications and IEEE Transactions on Vehicular Technology. He has served as Technical Program Committee (TPC) Chair for IEEE INFOCOM 2012. He was elected as a Distinguished Lecturer by IEEE Vehicular Technology Society in 2016. He is an IEEE Fellow.

**All are welcome!**



In case of questions, please contact Dr Jianping WANG at Tel: 3442 7737, E-mail: [jianwang@cityu.edu.hk](mailto:jianwang@cityu.edu.hk), or visit the CS Departmental Seminar Web at <http://www.cs.cityu.edu.hk/news/seminars/seminars.html>.

