**杨庆隆教授学术报告会**

报告题目：基于纠错码的信息隐藏与秘密图像共享

报告人：杨庆隆教授 （东华大学）

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主办单位：安徽大学计算机科学与技术学院

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安徽大学计算机科学与技术学院

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报告摘要：

数字图像的隐写技术是结合了密码技术与图像处理的的重要研究领域。本次报告的主题为基于纠错码的信息隐藏与秘密图像共享，主要介绍隐写与图像共享两种技术。这些技术可广泛应用于数字多媒体，特别是数字图像。基于纠错码的信息隐藏技术，是要提高信息嵌入率而且同时减少修改的位元的数目。有许多基于纠错码的信息隐藏技术，举例来说，使用汉明码、BCH码、Golay码。本报告简要地描述使用Hamming-like, Hamming+1, Hamming+k, Golay+1, Golay+2，和不等效错误保护码(UEP)等的的信息隐藏技术。当考虑应用于画素域时，基于纠错码的信息隐藏技术与众所周知的LSB 和OPAB隐藏技术有极大的关联性。事实上，这些方法只是从不同的面向来改变位元以嵌入秘密信息。另一方面，本报告也会介绍非画素域上的纠错码信息隐藏，例如在频域和AMBTC压缩域。

本次报告另一主题是基于纠错码的秘密图像共享。所谓的(k, n)秘密图像共享是将秘密图像分享成n个子图像，并且可以从任何k个子图像恢复秘密图像。但是，不能从（k-1）或更少的子图像获得任何秘密信息。在这个讲座中，会描述基于里德-所罗门码 (RS code)这个最大距离可分离码的秘密图像共享，并讨论基于RS码的密图像共享和基于多项式密图像共享的关系。另外，也会介绍基于汉明码和定量码的秘密图像共享。

报告人简介：

**Professor Ching-Nung Yang** obtained his Ph. D. degree in Electrical Engineering from Cheng Kung University. His B.S. and M.S. degrees, both were awarded in Department of Telecommunication Engineering from Chiao Tung University. Dr. Yang served in Dong Hwa University since 1999. His current title is Professor in Department of Computer Science and Information Engineering. He had been Visiting Professor to University of Missouri Kansas City, University of Milan, and University of Tokyo. He is currently a Fellow of IET (IEE) and an IEEE senior member. Professor Yang has done extensive researches on visual cryptography and secret image sharing, and is the chief scientist in both areas. In fact, a very important innovation of visual cryptography, the probabilistic visual cryptography, was firstly proposed by Professor Yang. His areas of interest include error correcting code, multimedia security, cryptography, and information security. He has authored two books and has published over 250 (including more than 120 SCI-indexed papers) professional research papers in the areas of information security and coding theory. In the meantime, he has served/is serving in international academic organizations. He serves as technical reviewers for over 40 major scientific journals in the areas of his expertise, and serves as editorial boards and editors of special issues for some journals. Also, he was invited as chairs, keynote speakers, and members of program committees for various international conferences. He is the recipient of the 2000, 2006, 2010, 2012, and 2014 Fine Advising Award in the Thesis of Master/PhD of Science awarded by Institute of Information & Computer Machinery.