Title: Group testing – A tool of protecting network security

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Abstract

In recent years, group testing has become one of the most effective search methods in various topics such as DNA sequencing, compressed sensing, drug testing and also network security. In this talk, we shall focus on its role on network security. The main subjects we are concerned are (1) Denial-of-Service attack of internet, (2) Jammer detection in wireless sensor network and (3) Multimedia fingerprinting collusion-attack. We start with an introduction of group testing with various models and algorithms. Then we apply suitable models to protect the security of network under the above mentioned attacks.