Abstract: In Mobile Cloud Computing (MCC), offloading is a popular technique proposed to augment the capabilities of mobile systems by mitigating complex computation to resourceful cloud servers. While offloading may be beneficial from the performance and energy perspective, it certainly exhibits new challenges in terms of security due to increased data transmission over networks with potentially unknown threats. Among possible security issues are timing attacks which are not prevented by traditional cryptographic security. Timing attacks belong to side-channel attacks in which the attacker attempts to compromise a system by analyzing the time it takes to respond to various queries. Offloading is particularly vulnerable to timing attacks because it often needs many times sending/receiving. So metrics on which offloading decisions are based must include security aspects in addition to performance and energy-efficiency.

In this talk we will discuss both the theoretical and practical aspects of offloading policies in MCC systems. Unlike previous work that only considers the performance and energy perspectives, we present and evaluate offloading policies based on tradeoff analysis to satisfy the security and performance requirements in offloading systems.