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Title: Automated Android Security Assessment: Malware, Vulnerabilities, and Exploits

Abstract: Android has become the dominant mobile platform. Millions of Android apps have been produced and disseminated across app markets, spurred by the relative ease of construction using the Android development framework. Unfortunately, this ease of dissemination and construction, and access to millions of users, has attracted malicious app developers and contributed to a growing number of exploitable software vulnerabilities. In this talk, to address these aforementioned challenges, I present two approaches for Android security assessment that I have constructed: LetterBomb, the first approach for automatically generating exploits for Android apps, and RevealDroid, a lightweight, obfuscation-resilient approach for malware detection and family identification that leverages machine learning and static analysis of both conventional and unconventional code (i.e., reflective code and native code).