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CIDSE Fall ‘17 Invited Talk Seminar Series

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Attacking the Browser

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Abstract

The browser has evolved from a simple program that displays static web pages to a continuously changing platform that has become our portal to the Internet. The fierce competition among the browser vendors has led to a remarkable introduction of features in past few years. The rapid changes and the high popularity of browsers have attracted attackers, which pose new threats to the unsuspecting Internet surfers. This talk will focus on recent attacks related to browsers. We will explore the security implications of browser extensions with malicious intent and how difficult it is to automatically analyze and classify them. To cope with this new problem I'm going to present Hulk, a dynamic analysis system that detects malicious behavior in browser extensions by monitoring their execution and corresponding network activity.

Biography

Alexandros Kapravelos is an Assistant Professor in the Department of Computer Science at NC State University. He received his PhD in Computer Science from University of California, Santa Barbara in 2015. His research interests span the areas of systems and software security. Currently, he studies how the web changes on the client side via browser extensions and how we can protect the browser from malicious client-side attacks. He is also interested in Internet privacy and browser fingerprinting specifically, where he is working on making Internet users less distinctive while they browse the web. He has been the lead developer of Wepawet, a publicly available system that detects drive-by downloads with the use of an emulated browser, Revolver, a system that detects evasive drive-by download attempts, and Hulk, a browser extension analysis system.

Hosted by: Adam Doupé & Yan Shoshitaishvili

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