

Evaluating the effectiveness of defences to web tracking

Darrell Newman

Technical Report

RHUL-ISG-2018-7

5 April 2018



Information Security Group
Royal Holloway University of London
Egham, Surrey, TW20 0EX
United Kingdom

SUMMARY

This thesis fulfils part of the requirement for the award of MSc in Information Security at Royal Holloway, University of London. It takes an extensive look at web tracking, a topic of particular interest to academia in recent years, and how practical it is to defend against. To do this, we will look at the different approaches and methods adopted by trackers, from traditional approaches using cookies to the more recent discoveries such as those for producing unique values known as fingerprints to help identify browsers and devices across the internet.

With this knowledge, a comprehensive list of defences is presented and a selection picked for investigation based on their ease of use and, more importantly, effectiveness. These are tested using a bespoke framework written in Python specifically for this study to automate Mozilla's Firefox browser and gather and analyse the results. The results show that for the defences tested it is practical to reduce being tracked by a respectable amount, although impractical to completely prevent tracking. Finally, a number of recommendations are presented to help preserve privacy while online.