Research Proposal

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1 Introduction

The business of online advertising has evolved to a landscape which is not transparent anymore. A handful of large advertisement firms are controlling practically every online ad you see. Almost every movement during the visit of a regular website is sent in an obfuscated way to the advertisement broker, without any visible sign to the end user. This makes the whole browsing experience obnoxious, especially now it turns out that entire societies are influenced by the power of advertisement networks, as we have seen in the Cambridge analytica scandal[1].

This proposal focuses on the development of a concept which combines distributed systems and client based profiling in order to provide a transparent and privacy-friendly advertisement network.

2 Problem

The difference between tracking and targeting is, that tracking is the art of building a profile, which can be targeted. Targeting it about finding the right match between an advertisement and a user. In the classical industry, targeting was only possible based on general profiles. During the internet era, it became possible to build personal profiles based on interests, now they are more fine-grained than ever. In the current Big Data revolution, even the smallest improvement can lead to significant advance in revenue. This makes the industry very competitive and hard to investigate.

3 State of the art

Most experimental systems have been developed a couple of years ago. For example, RePriv[2], which is an extension framework that makes it possible supply

[1] Carole Cadwalladr and E Graham-Harrison. "The Cambridge analytica files". In: *The Guardian* 21 (2018), pp. 6–7.

[2] Matthew Fredrikson and Benjamin Livshits. "RePriv: Re-envisioning in-browser privacy". In: *Proc. IEEE Symp. Security, Privacy (SP)(May 2011).* 2010.

more profile data to services with limited knowledge about the user. This data is mined while using other services.

Privad provides a more privacy related solution to the tracking problem. The system is split up into a broker and a dealer, where the broker does not know which user supplied the profile that should be matched with advertisement.

4 Concept

The problem with existing solutions is that there are still parties that need to be trusted. For example: What happens if the broker and the dealer are secretly working together and sharing all the details? In this case, your profile would be identifiable to the broker.

In order to make it more anonymous, a decentral structure is proposed which relies a cryptocurrency to process the payments.