

Google Reads Mind-The Magic

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Abstract—Google is the Internet giant which provides search Engine, Cloud computing, Advertising Technologies, Hardware and software. We know that Google earns more than half of its revenue from google ads. They provide many products to us like Gmail, google photos, google drive and many more which we think that they are offering free of cost, Are they? Andrew Lewis commented: if you're not paying for the product, you are the product. Google tracks each and every move That means they know every search you've ever done on Google. If you are fond of using OK-Google/microphone command then yes, Google does record your voice and stores it too. They grab that information and used it for Advertising which makes us Google's product.

I. INTRODUCTION

It is vital for Google to keep an eye on us in order to better their services. However, in case we're not signed in to a Google account, it could at present track a portion of our exercises, it sees our IP address that we're utilizing to associate with Google and uses those assets to create our area. This helps them to keep track of plenty of personal bits. Google keeps tracks and records your personal bits. As well as they record your searches and your voice. These personal bits are used by Google to target ads. As we peruse Google locales like YouTube and accomplice sites like Amazon, Flipkart, Google stores a promoting treat in a client's program to understand the sorts of substances that the client is seeing. This data is utilized to demonstrate Interest-based promotions [1 – 3].

A. Google Knows Everything

Everything you search in Google, type in mail, store in your phone and every conversation you make is recorded by Google. It uses a vast artificial intelligence based techniques[4-9]. So Google knows who your friends are, what's your favorite color, where you are going tonight, which people betrayed you Google even knew I was going to break up with my girlfriend a month before I did. This will Allows Google to extract information for better ad targeting leading to increased lift so advertisers are willing to pay more. Photos from cellular phones identify locations in their EXIF data. Machine learning classifiers can associate interests and people with users [3].

B. Eyes on our Photos

When we upload any picture to google photos then Google assures that our photo's privacy but we don't know that Our privacy is compromised by them. Google knows I like cats because their ML classifiers noticed many of my photos contain one. Instead of stitching them together into a video, their software could have adjusted the advertising I see on YouTube. Well imagine this, 1,000,000 people each take 1 photo of their family and have it synced to Google photos. Now Google has at least 1 million individual unique faces to learn from, to improve their AI/machine learning algorithm same goes for voice with Google assistant which arguably by far has the most advanced AI out of the 5 major ones, they now have the minimum of 1 million different voice patterns to improve speech to text, etc.

C. Say ok google

When we utter "Ok Google " then Google assistant turns on and starts recording our voice. Once google done recording it uploads these voice logs to google activates server which google claims to use that log to give interest-based ads to the user. It regularly switches on the microphone to grab out day to day activities to save in google activates. Google has access to the library of your deepest and darkest secrets. We could use our voice to perform various actions like asking the weather, get directions, create reminders, call someone and much more, Google uses its natural language processing algorithm which engages two-way communication and presents its

results in form of cards that could be opened by simply tapping on them by the user. Alexa, Cortana and Siri work the same way, however further enhancements are being done to make it better day by day. Now the google assistant is capable of speaking a couple of accents for the users from the US. In addition to it, early morning routines and adjustment of lights, thermostats could also be done automatically while leaving the home or coming back to home from work.

II. METHOD

Turning off Google's location history, browsing history doesn't stop it from tracking our activities whether in real-world or in virtual. We are always being tracked by it some way or the other. Google continues to track us through its various services like Google maps, weather updates and browser searches. Though there is a way to actually get Google to stop tracking us by turning off "Web and App Activity" which is turned on by default, doing so won't anymore allow Google to store our time-stamped location data. We could also delete the stored history by heading into myactivity.google.com.

If you're online, then there are pretty good chances of you using a Google product whether one knows it or not. According to a survey the data that Google collects altogether which creates a Google verse could be distributed as follows:

- Global market penetration for Android around 61-81%.
- Global penetration for YouTube around 82%.
- More than 79+ Google products and services.
- Around 700000 apps available in the Google Play store.

Google actually tracks only three types of personal data from its users: Things that you do, Things that we create and the things that make you 'YOU' and it generates revenue of around \$67.39 Billion from its annual advertising. So, we are actually the product that is generating revenue for Google.

HOW GOOGLE GETS ALL OUR DATA?

The digital data that Google collects for an individual grows the more one uses Google products to search for stuff, read and send emails, browse the web, use apps and especially if you own an android device. Our Google accounts which are linked to Gmail, Chrome, Google Drive, Google+, YouTube to name a few are the leading ones in sending our daily activity and data search logs to Google. If you're one of 1.4 billion Android users then Google knows which app you purchased and which ones are you using, your GPS location over time, voice searches and your picture and videos. Google Analytics makes use of something called tracking pixel which tracks our webpage views and actions on any of the 30-50 million websites and apps, which sends our data to Google.

Now one might be curious to know that Google collects such a large volume of data from every individual using their services. The answer to this question is that Google uses Google Analytics for this purpose. Google Analytics is a free web examination instrument that breaks down the site traffic. It puts a few lines of the following code into the site's code which records different exercises of its clients when anybody visits the site alongside traits like age, sex, interests of those clients. The Google Analytics sorts the information gathered from sites from multiple points of view principally into four dimensions:

- User-level, identified with the activities of every client.
- Session level, every individual visit.
- Pageview level pages visited by a person.
- Event level, the video sees, catch clicks and so on.

The information that could be gathered from Google Analytics is of two kinds: User Acquisition information i.e., the information about clients before they visit the site and the second one is the User Behavior information i.e., the information about the clients when they visit the site.

HOW DOES GOOGLE know OUR INTERESTS?

Each time we look at something there are thousands or a great many pages with accommodating data. In this way, how googles make sense of which results to indicate some time before we even sort and we are guided by a guarantee to give the best data to which we are looking. Indeed, even before we look, Google sorts out the data about website pages in our inquiry file which resembles a library. The crawling procedure starts with a rundown of web addresses from past slithers and sitemaps given by proprietors of those sites. As Google's

crawlers visit these destinations, they use interfaces on those pages to discover distinctive pages. PC programs set up what goals to crawl, how consistently and what number of pages to get from each site. At the point when crawlers discover a site page, the framework renders the substance of that page. Google observes key signs from catchphrases to site freshness and monitors it all in its hunt list. Google's pursuit calculations sort through many billions of site pages in our inquiry record inside a small amount of second to locate the most important outcomes we are searching for. To return relevant results for our query, it first needs to establish what information we're looking for i.e., the intent behind our query. Next, algorithms analyze the content of webpages whether the page contains information that might be relevant to what we are searching for. The most basic signal that information is relevant to the webpage content is the keywords that match with our search query. After matching the search algorithms aims to prioritize the most reliable sources available also the Google search also evaluates whether webpages are easy to use. The information which includes our vicinity, past search history and seeks settings all help Google search to tailor our consequences to what is maximum useful and applicable for us in that second.

HOW GOOGLE MAKES MONEY WITH ADVERTISING?

Google's principal source of sales is marketing on their websites and apps which enables them to maintain Google services unfastened for everybody. When we search for anything on Google, it displays the best-suited results to us, sometimes that information comes in the form of an advertisement which it'll show along with search results which are always marked with a label like 'ad' or 'sponsored'. If one finds an ad useful and clicks on it to know more the advertiser pays Google. Google also makes money by helping other sites to make money by advertising. It uses data to show ads that can be useful to us whether or not they are on Google or they're on websites and mobile apps that are associated with Google. The publishers of a site could ask Google to provide the ads. When Google shows ads on someone else's site, it keeps a portion of the money from those ads through the major part of it goes to the publisher.

GOOGLE ADS

Google Ads, once in the past known as Google AdWords, is a web-based publicizing stage claimed and worked by Google. Sponsors picking Google AdWords can target clients crosswise over two primary systems: The Search Network and the Display Network.

The pursuit arrange alludes to pay-per-click publicizing, in which sponsors offer on catchphrases applicable to their business and get an opportunity to show their advertisements to clients who enter those watchwords into Google as a feature of hunt question.

The factors affecting this Ad Rank are:

- Bid amount: higher the bidding higher the rankings but it isn't enough.
- Auction time ad quality.
- Context of search: location, device, time and many more relating to ads.
- Ad extension impact.

The ads need to have high -quality scores, matching contextual data and high CTR's.

GOOGLE ADSENSE

It is a program running by Google that licenses distributors in the Google Network to serve modified substance, picture, and chronicles that are engaged to site substance. The AdSense promotions appear in locales which partake in the Google AdSense program. It works with gaining per snap and cost per click, distributors will get paid for snaps on advertisements showing up in their destinations. Right now, its distributors get 68% of the snap cost and Google 32%. Any distributor that meets the Google AdSense rules can take part in the program and are paid month to month by Google. It is an extraordinary path for distributors to profit online as it is anything but difficult to utilize, dependable and works superior to some other stage. Google fills the unfilled space on our site with promotions that are identified with our substance and gathering of people utilizing a mind-boggling calculation. When somebody taps on those advertisements showing up on our site we get an extensive segment of the income. The AdSense earnings are calculated as:

AdSense Earnings = Impression-count * Click-through-rate * Cost-per-click * smart-pricing-factor.

The **CTR** i.e., click-through rate can range from 0.1% to 30%, but it is mostly around 1% to 10%. The reports on impressions and clicks are updated usually after every 15-30 mins. The AdSense uses a different crawler

from the Google crawler. **CPC** calculation is based on an auction type system. AdSense besides content sites is also available for games, videos and search products.

III. RESULTS AND DISCUSSIONS

Google tracks us on and off the web from numerous points of view – that is nothing unexpected. Yet, we could wrestle back some control. Google, the publicizing goliath gathers information each time we look through the web, visit a website, at whatever point we utilize our Android telephones. It utilizes this information to find out about us and it's the expense of getting its administrations for nothing yet there are approaches to restrict what Google gathers about us. For each of the ways it tracks us, there's a place to get to see the data, the data which google keeps track of comprises of:

- Activity history, possibly all of our web activity including deleted browsing history.
- Location history, if we use an Android Google maps and have location service turned on then we're leaving a GPS trail everywhere we go.
- Audio history, if we use voice commands to do a search, we create an audio history.

There are two different ways to get a duplicate of every one of our information gathered by Google: Takeout and Dashboard. Takeout was made to give clients a chance to get their information from Google and move it to another administration, beginning with photographs and contacts. It could a couple of days to make the Takeout file with Google sending us a connection to download it when it is prepared. The dashboard was planned in light of keeping the information the executives, offering us a depiction of our information gathered by Google as we utilized its administrations. It incorporates a number of sends traded through Gmail, number of records in Drive, yet the most profitable data is the thing that Google names "movement information, for example, our area or hunts or perusing history.

Google utilizes the gathered information to construct a promotion profile and profiting through advertisements not by legitimately selling our information but rather by giving organizations a chance to modify their advertisements as indicated by our interests. Peering toward up Takeout, Dashboard, and your own and publicizing profile, you'll get a not too bad sentiment of the epic stack of data Google is amassing about your character, where you go, and what interests you. If you think Google is overlooking something, or has more data on you it's not promptly revealing, you can moreover record a subject-get the opportunity to request, which is a benefit respected in EU law to find what data any affiliation hangs on you.

WHAT ARE THE WAYS TO LIMIT GOOGLE?

Presently that we're mindful that tremendous measure of our information is being gathered now is the ideal time, we ought to take care of business. Google's default settings empower it to gather information as opposed to one's close to home protection however the organization has made it simpler to consider our settings on the Data and Personalization page with Privacy check replenishing us through a lot of inquiries in regards to our settings.

WEB & APP ACTIVITIES

It gathers our pursuits and perusing exercises in Google applications, for example, Chrome and other Google administrations. On the off chance that we turn this off, we'll not have the capacity to see ongoing quests or customized results.

VOICE

On the off chance that you converse with your telephone or a Google home gadget, a record is kept which is utilized to improve its discourse acknowledgment, including better comprehension of your voice. Each record is joined by subtleties of when the account was done and by which application, we could even playback the sound clasps. These records could be erased at the same time or one-by-one, additionally, it could be incapacitated in our record under My Activity.

OTHER SETTINGS

Alongside the above-expressed arrangements, we can likewise impair YouTube watch history and Search history which Google uses to suggest, and oversee Google Photos, for example, crippling face acknowledgment and deleting area information from the metadata of shared photographs. The most ideal approach to restrict Google's information gathering is by changing to some non-Google items and administrations which suits us.

Regardless of whether we erase our record totally and still, at the end of the day, Google may at present have the capacity to follow us by means of what one report called "latent information".

IV. CONCLUSION

Google tries to read everyone's mind who uses its services/ products. It could read some parts of our mind at some point in time whereas it estimates our perspective thought based on billions of other user's thoughts and provides the results we want. Its estimation accuracy varies and improves with time. The more the algorithm runs on the user's data, the more it could understand human beings and their needs better than themselves in the future. Google which has billions of users have the advantage of prediction of human action and activities based on billions of user's data analysis. The potential impact of algorithms on the particular individual might be less but the collective impact on people belonging to a particular state or region is huge. It could create a huge impact on reduction or increase in crime rate, elections, people's opinion on any issue their thought process.

It's possible for Google to collect data from a wide range of sources based on our activities to create a profile of us which could infer search suggestions, in addition to their library of what people search when they start with a specific string. This is the power of Big Data at work. Google doesn't actually read our mind rather it reads our footprints, which we have left all over the Internet while browsing or performing other activities. Out of multiple thousands of data pieces on you, compared with multiple thousands of data pieces on multiple thousands of users, Big Data could draw parallels that could "know" more about us than we know about ourselves.

Google creates most of its income by selling promotions on the pursuit pages may of us use. Promoters offer to have their advertisements for their items or administrations showed an important inquiry question result page. The combo of offer sum and nature of potential advertisement impacts whether a promotion will show up at the highest point of the page, where more clients are bound to see it. The fascination of the administration to publicists is they can target promotions at Google clients who have officially communicated enthusiasm for what the advertisements sell and disregard Google clients who haven't. Google's exclusive innovation consequently normally facilitates advancements to the substance of page on which it appears and marketing experts pay it either when a customer taps on one of its notices or subject to the events the advancements appear on Google Network.

V. REFERENCES

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