

# Facebook's Graph Search: How Will It Affect Your (Long Gone) Privacy?

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### Introduction

In February 2014, the most widely used social network celebrated its 10<sup>th</sup> birthday, only a few months after reaching the 1.3 billion users-milestone. If Facebook were to be a country, it would be the second most populous on Earth, just after China. Besides its remarkable quantitative growth, the Menlo Park's firm also experienced an incredible qualitative development. The newly released Graph Search is a shining example.

Since July 2013, Facebook has been experimenting with a new tool called the Graph Search. The tool is nothing but a semantic search engine, designed to answer queries based on their intended meaning rather than on matching keywords. In short, running queries such as "who are the single ones living in my neighborhood?" or "photos of my boss taken in a pub" is now made possible. Now the Graph search is available using the English (US) setting.

The underlying concept is the one of Natural Language User Interface (NLUI or commonly referred to as LUI), whose first conceptualization dates back to the late sixties. The technology is already used by several other software or Web-based applications, such as Stephen Wolfram's Wolfram Alpha or Apple's "Siri", to name only the most well known. So, really nothing new, or is it?

Although the concept in itself is not new, its integration to the largest publicly-accessible database of private information is a breakthrough. The Graph Search enables complex queries based on a lot more than just your name. All data such as your age, gender, hometown, religion, pages you like or photos you were tagged in are now search criteria taken into account. The major change is that your profile can appear in the search results of people that did not even know your name. The irony is that you can not even complain since you gave away all rights on your information from the moment you post it.

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## Reversing the Prevailing Logic

How will it work in practice? Previously, queries on Facebook's search bar used keywords: in order to find a person, for example, you had to know his/her name, at least partially. People's and pages' names were the search criteria. Nowadays, the search criteria have been expanded and can be classified into three general categories:

#### 1. Identification data

Graph Search queries integrate the user's personal data, such as occupations, hometowns, birth dates, etc. For example, you can find "people living in Geneva, Switzerland, who work for Procter & Gamble and were born in 1980". The query will show you a list of profiles.

### 2. Actions

The Graph Search also takes into account what we could call people's actions. For example, the books they read, the music they listen to, and basically every thing they "like". For example, you can search for "people who read the Marquis de Sade, or "like" sadomasochist sex and work in my company". The action of "liking" something such as a brand, a politician, a sport's team or a hobby is traceable by Graph Search and can potentially bring out your profile in many researches done. The number of people who "like" Al-Qaida Al-Jihad and live in the U.S.A or "like" the Mossad and live in Gaza may also surprise you.

### 3. Media (photos & videos)

Managing the pictures on Facebook is a sensitive issue. Numerous protests were made when the company announced it was using biometric technology and facial recognition. On the social network, we can distinguish two kinds of pictures: the one that you posted and thereby control (managing who can see them, tag and delete) and the ones posted by other users in which you appear.

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Using your privacy settings, you can effectively block people from viewing your pictures. Just like every one of your publications, you can effectively select its audience.

Other users can however "tag" you on a picture, meaning that your name will appear with an active link to your profile. Of course, you can delete the identification. You can also set the preferences in such a way that "tagging" you is only possible with your prior consent.

Just like your identification data and actions, photos are thereby search criteria. For example, you can search for "photos taken in Hyde Park" or "photos of friends of friends of mine taken this month".

The most sensitive issue comes from the "tag suggestions". If the facial recognition algorithm identifies you in a picture, it will suggest other users to "tag" you by indicating your name. Fortunately, the feature is still restricted in such way that only your friends can see suggestions.

Broadly speaking, the Graph Search further widened the possibilities. It is now easier than ever to find people corresponding to predefined search criteria and, once identified, to retrieve almost every piece of information they ever poured into Facebook's wideopen jaws.

Facebook used to provide you with information about people you were friends with. It can nowadays be used to find information about people you don't know. Should you still feel skeptical or indifferent, the following case study will probably send chills up your spine.

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### Identifying one of my colleagues on Facebook

As I was starting to write this piece, a colleague of mine had the silly idea of bragging about his Facebook account and the fact that I would never find him, being registered under a nickname.

I accepted the challenge. The only piece of information I had was his girlfriend's first name and a vague memory of her face, having met her a few weeks before in an after-work event.

I began to search for her profile, knowing that it would be my best chance to further identify my colleague. I assumed that, being roughly the same age and having both attended the University of Geneva at the same period, we would most likely have friends in common. I used the Graph Search to find all people with the same first name who went to the University of Geneva. I further restricted the search to people I had friends in common with.

Facing a significant list of people who do not necessarily use passport photograph as profile pics, I used one of the Graph Search's new features. Once an individual or –in this case- a list of results identified, the search bar proposes you to see "Photos of".

Once retrieved the "Photos of people named O. who went to the University of Geneva with whom I have friends in common", identifying her on one of the pictures and accessing her profile was an easy task.

While browsing her timeline, I noticed that the same person liked a lot of her publications. I accessed this individual's profile and ran the same query than before to see all pictures linked to this profile. I even retrieved pictures my colleague did not even remember existed. His sullen face was bending over my shoulder, knowing he lost his bet. He was so upset that he promised to delete his profile within the hour.

A colleague of mine had the silly idea of bragging about his Facebook account and the fact that I would never find him, being registered under a nickname.

It only took me 10 minutes to retrieve photos of him he didn't even know existed.



### In Conclusion

The Graph Search is a powerful tool. The most obvious outcome of its inception is that it reversed the prevailing logic. You once had to "be friends" with another user to access information about her/his musical preferences, locations, photographs, etc. Nowadays, you can crawl into Facebook's users and search for them using that very information.

Should you be the proud owner of a Facebook account, rest assured. Indeed, you can always test your profile using the "see my profile as" feature, just to know what it looks like from any other user's perspective. You can also set your settings in such way that nothing can be used as search criteria (it is worth paying a visit to your account privacy settings). People's carelessness is the royal way into their private life.

Should those precautions not be enough, just remember that if you don't want Facebook to know something about your life, just don't publish it in the first place.



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CEO & Founding Partner

Joël Pastre spent a decade in the financial industry. Starting as an analyst in the Hedge Fund Research team for two years in a reputable Swiss Asset Management company, he then moved as Quantitative analyst in charge of the development of Quantitative Due Diligence Processes in the Quantitative Research department. He then spent five years as an analyst, portfolio manager, where he was responsible for both traditional equity as well as long-term investment portfolios. He also managed several funds, including the open Fund AAA Long Only Fund -European Equities, which received a 5-Star rating from MorningStar for its overall performance. He also worked for a three- year research program financed by the Swiss Confederation: "Swiss Corruption and Organized Crime". Moreover, Mr. Pastre is co-founder and treasurer of the OCO, the Organized Crime Observatory.

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Nicolas Giannakopoulos was in charge of a three-year research program financed by the Swiss Confederation, the "Swiss Corruption and Organized Crime". Prior to this, he was active in many research programs and carried out numerous analyses for large institutions. He has collaborated closely with magistrates and law-enforcement services and was awarded the medal of Merit by the Brazilian judicial authorities. Mr. Giannakopoulos has published significant material on the different aspects of modern criminal organizations. He is also President and co-founder of OCO, the Organized Crime Observatory, and director of the Geneva-based criminal investigation company, Inside.CO SA.