

A SUMMARY OF MY TWENTY YEARS OF RESEARCH ACCORDING TO GOOGLE SCHOLARS

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Abstract. I am David Pardo, a researcher from Spain working mainly on numerical analysis applied to geophysics. I am 40 years old, and over a decade ago, I realized that my performance as a researcher was mainly evaluated based on a number called “h-index”. This single number contains simultaneously information about the number of publications and received citations. However, different h -indices associated to my name appeared in different webpages. A quick search allowed me to find the most convenient (largest) h -index in my case. It corresponded to Google Scholars.

In this work, I naively analyze a few curious facts I found about my Google Scholars and, at the same time, this manuscript serves as an experiment to see if it may serve to increase my Google Scholars h -index.

Key words. Google Scholars, h -index.

1. Introduction. When I was a kid, my parents emphasized the great importance of obtaining good grades at school. This, indeed, allowed me to obtain a fellowship that funded my studies abroad. During my Ph.D. studies at The University of Texas at Austin, I quickly learned that a key issue for a successful academic career was to publish articles in well-reputed journals. I did it, and as a result, I obtained the postdoctoral position I wanted, as well as a few other job offers. A few years later, once the number of publications increased over 20, I realized that this indicator was no longer going to promote my career any further; instead, the so-called h -index would become the key number that would allow me to obtain adequate funding and a better job in academia.

A researcher has an h -index N when it has published N publications that have received at least N cites. Thus, to increase this number, one needs both to publish and receive cites. Over the years, I have seen multiple ways employed by researchers to increase their h -index, which I classify here into two types:

- By increasing the expected number of received cites. For example, by working on “popular” topics, or within a research network that often cites among themselves. In particular, belonging to a specific community highly increases the chance of maximizing the number of received citations.
- By selecting the most convenient method of computing the h -index, in other words, out of all existing databases computing h -indices for a given scholar, by selecting the one that provides the largest number.

In this work, we focus on the second method to increase the h -index, since it seems to be the simplest (fastest) one. The first thing I realized over a decade ago was that Google Scholars offered me my highest h -index indicator out of all available “*serious*” webpages. By “*serious*”, I mean that they contained mostly accurate information. By comparison with other “*serious*” webpages, I realized that Google Scholar contained a more complete database, which was at the core of the reason why it also exhibited a higher h -index. So I selected it as my main h -index indicator.

After I created my Google Scholars profile, I fixed a few inaccuracies (mainly removing some articles of other authors with the same name as me), and I was almost ready to go. One thing about Google Scholars still bothered me: The only book in which I was a co-author was not listed (despite of it being sold by Google Books),

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and its reference was mixed with another book with a similar title. I made several attempts to fix it over the years, but all of them were unsuccessful.

On March 2018, I entered into ResearchGate, and the book I was co-author of was properly listed. Moreover, this book was the most cited publication I had according to this website. Unfortunately, I found no way to reflect it within Google Scholars, which on the other side, has gained vast popularity among researchers over the last decade.

In view of these inaccuracies reflected by Google Scholars and the great importance of it on my professional career, I decided to further understand how it works, and to try to boost my h -index without incurring in any wrongdoing such as, for example, attributing myself works of other authors.

2. Method. First, I read some instructions of how Google Scholars collect information from the webpage. To include a publication, I had to include the PDF file of the publication, along with a reference to it possibly using “meta-tags”. In the case of the book I co-authored, it is protected with copyright, so I did not have the option to include such PDF file on my webpage.

Then, I decided to download all publications from my profile, and produce a bibtex file in order to further analyze it. I had to clean this file due to some articles appearing from other researchers (with almost no received cites on them, since from time to time I fix these issues), and also because the bibtex generated by Google scholars contained several identical identifiers from different articles and due to this, the resulting file did not properly compile in Latex. After this cleaning process, the final reference list was: [1–174].

In the above list, it is possible to observe several inaccuracies, including incomplete references (for example, lacking all information except for the title and list of co-authors), some incorrect titles, co-authors names, etc. Nonetheless, I decided to show here the list as I obtained it from Google Scholars in Mar 2018. Without modifications.

Then, I did a search of some of my articles in Google Scholars in order to discover from where was this information coming from. In addition to for-profit Journal publishers like Springer or Elsevier, information about other articles was obtained from webpages such as ResearchGate and similar ones, and also from local repositories like the one of my University (The University of the Basque Country, UPV/EHU) or a research institution I am affiliated with.

3. Experiment. Uploading a manuscript to a Journal requires writing an original article, then going through a peer-reviewed process, and so on. However, uploading an article to a University repository only requires a PDF file and completing a simple online form. If this PDF file contains multiple references to your work, and Google Scholars detects it as a valid scholarly article, the h -index may increase without performing a significant amount of research. By repeating this operation, it appears at first glance that one can easily boost the h -index of a given researcher.

In this experiment, I will upload this manuscript to my University repository, and wait for a few weeks to see if it has been incorporated into the Google Scholars database. In case it occurs, I will verify if the number of received citations increases in my profile as a result of this publication.

4. Conclusions. Many researchers employ Google Scholars as a guide to analyze the received citations since it is one of the “*serious*” webpages with one of the largest database. The key of its success (the use of a large database) may, at the same time, be at the core of its main weakness: perhaps a given researcher can easily alter its

numbers, thus, becoming unreliable to measure the research performance as needed by Academia.

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