

# An app for personal searches

## more-private, non-volatile searches with stigmergic inspiration

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## Abstract

- Web searching has long become a ubiquitous behavior amongst Internet users. Much has been changing: odds are that the thousands of results of yesterday have become millions of results today, but **did that significant jump in quantity translate to an increase in the perceived results' quality and their applications?**
- Some users might feel **personalization efforts as stereotypification or even as inaccurate biases**; they may also beware that **every click on every search result may reinforce and contribute to (in)accurate representation of them** - and would prefer searching **without tracking**.
- **"Personal Searcher"** is a work-in-progress app that makes it possible to **search more anonymously**. It also makes it possible to keep a **private local-only history of one's searches** and **build personal ranking systems** based on that history and other data. The goal is to benefit from local offline personalization, but search online as anonymously as possible.

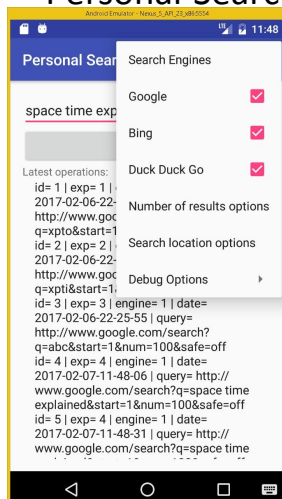
## Introduction

- Search Engine?
  - search expression / **keywords** > black box? > search engine results
- Search
  - "classical"
    - Google
    - Bing
    - DuckDuckGo
  - "real-time" via social networks
    - Twitter

## Search Engines?

- Archie, "archive without the v", FTP, 1990
- Altavista, Infoseek, WebCrawler, Yahoo, Lycos, 1994
- Hotbot, 1996
- Google, 1996
- Ask.com, 1997
- AllTheWeb, 1999
- Cuil, 2008-2010
- Bing, 2009

## Personal Searcher / Concept [1/3]



- Deliver results from multiple search engines, combining them all, if the user so selects
- Users can select:
  - which search engines to use
  - how many results per search engine
  - force a "search location", instead of accepting the device's detected location

App contributes to a more private search experience.

- Requests are encoded without identifying the user nor the device
- Clicking a search result won't inform the search engine of the user's choice
- History and all data structures are kept locally
- Have you noticed?
  - Search results don't link directly to their reported destination
  - For example the following Google result seems to link to
    - History of Portugal - Wikipedia  
[https://en.wikipedia.org/wiki/History\\_of\\_Portugal](https://en.wikipedia.org/wiki/History_of_Portugal)
    - [https://en.wikipedia.org/wiki/History\\_of\\_Portugal](https://en.wikipedia.org/wiki/History_of_Portugal)
  - But instead it links to
    - [https://www.google.pt/url?sa=t&rct=j&q=&esrc=s&source=web&cd=13&cad=rja&uact=8&ved=0ahUKEwjB0pmr1vzRAhFXRoKHuYufDMgQFghTMAw&url=https%3A%2F%2Fen.wikipedia.org%2Fwiki%2FHistory\\_of\\_Portugal&usq=AFQjCNHwRjXWd1DDeD8IHg4mp48-feJ9JQ&bv=146094739,d,d2s](https://www.google.pt/url?sa=t&rct=j&q=&esrc=s&source=web&cd=13&cad=rja&uact=8&ved=0ahUKEwjB0pmr1vzRAhFXRoKHuYufDMgQFghTMAw&url=https%3A%2F%2Fen.wikipedia.org%2Fwiki%2FHistory_of_Portugal&usq=AFQjCNHwRjXWd1DDeD8IHg4mp48-feJ9JQ&bv=146094739,d,d2s)
    - The params say much: they encode information about the user, the browser, the linked content, etc.
- "Personal Searcher" eliminates tracking data from all requests and results

## Personal Searcher / Concept [3/3]

- Stereotypification?
  - Just because you are @Portugal, it doesn't mean you prioritize Portuguese content/results
  - Just because you've been watching some cooking videos, it doesn't mean they should dominate your video search results
- How to customize the search experience without tracking and keeping the user anonymous?
  - Via "topical search engines"
    - (large) collections of websites on "topics", searchable on demand
    - Pre-built and/or offered in-app (add-on purchases?)
    - Built by the user
- From one's private searches some facts will **naturally emerge**, namely:
  - a certain distribution of searched expressions
  - preferences regarding search providers
  - a "rank heat map", signaling if the user opts for the #1 ranked results, or for others; i.e. a **synchrony with, or deviation from, the default rankings**
- This data can be used for a **search experience that rearranges/reranks results**, automatically or manually:
  - user can tune certain stigmergic inspired configurations

## Stigmergic inspiration [1/2]

- Stigmergy?
- Greek "stigma" (mark) + "ergon" (work)
  - meaning "the mark of work" ([Grassé 1959](#))
  - a form of indirect communication where the communicating parties communicate via a shared medium
    - e.g. termites communicate via pheromones left on building materials (mostly mud balls)
    - assuming the availability of an history of his/her behavior, an Internet searcher communicates at least with him/herself, by signaling some expressions (when typing/searching them), search engines (when using them), ranks (when selecting them), etc.
- When searching, users work:
  - on the "search expressions"
  - on the "search engines"
  - on the results, when selecting them

## Stigmergic inspiration [2/2]

- The work
  - on expressions
  - on search engines
  - on search results
- will cause a more vivid signal on those resources used
- to model pheromone evaporation, all resources' signals will decay, at a configurable number of uses/searches performed
- results with more vivid expressions, and/or from more vivid search engines, and/or from more used ranks will be somehow get promoted, to facilitate their future (re)use