

Internet search results could be increasing your carbon emissions






December 8 2022, by Malte Rödl and Jutta Haider

"summer clothes" ✕   

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About 15,100,000 results (0.56 seconds)

Ads · Shop "summer clothes" ⋮

 <p>SALE</p> <p>Floral Print Shirred Layered Dress</p> <p>£14.49 £18</p> <p>SHEIN</p> <p>45-day return...</p> <p>By Google</p>	 <p>Allover Print Butterfly Sleeve Dress</p> <p>£15.99</p> <p>SHEIN</p> <p>45-day return...</p> <p>By Google</p>	 <p>100 Degree Dress by...</p> <p>£68.00</p> <p>Free People UK</p> <p>30-day return...</p> <p>By Google</p>	 <p>SALE</p> <p>Floral Print Shirred Waist Dress</p> <p>£10.99 £14</p> <p>SHEIN</p> <p>45-day return...</p> <p>By Google</p>	 <p>Women's Casual Dress Shift</p> <p>£20.00</p> <p>LightInTheBox</p> <p>By Google</p>
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<https://www.boohoo.com> > WOMENS ⋮

Holiday Clothes 2022 | Summer Clothes & Summer Outfits



Get sorted with **summer clothes** from boohoo. From floaty summer outfits to swimwear and dreamy holiday clothes, shop it all here.

[Summer Shorts](#) · [Holiday Accessories](#) · [Holiday Shoes](#)

Search engines sell ads, so they have an incentive to encourage more consumption. Credit: Google, [CC BY-SA](#)

Almost everyone thinks they know how to use Google, and they usually get the answer they want. Many will intuitively know that the query "milk good for you" leads to different results than "milk bad for you." The same goes for queries for "climate change" versus "climate hoax," or for "2020 US Elections valid" versus "stop the steal."

Since [search](#) engines are more a "wish list" than an authoritative source, they can help [spread mis- and disinformation](#) which can be [harmful for democracy](#) or society. They are not neutral information brokers.

Instead, search engines return a list of results that they deem most relevant to a specific query. The underlying algorithms make a decision on [relevance and visibility](#) for a specific query at a specific location and sometimes for a specific user.

Search engines are an [integral but often invisible part](#) of how people navigate the modern world. In this function, they also shape understandings of reality and thereby can harm the environment. In a [recently published paper](#), we argue that the assumptions search engines make about what we are looking for may lead to people emitting more carbon than they would have done otherwise.

The environmental harm of algorithmic curation

Take the query "summer clothes" as an example. You will receive a list of online or nearby stores that sell summer clothes, as well as pictures of fashion models showing off the clothes for sale. This is exactly what we expect.

But other possible interpretations of the query "summer clothes" are possible. Maybe you want to find out what were summer clothes in a particular historical period. Maybe you want to see which colors in your wardrobe are best to wear this year. Or maybe you actually want to buy

summer clothes, but only from organic or fair trade certified fabrics, or from a second-hand shop.

You can also enter the names of two [big cities](#), like "Berlin Stockholm." Google will present you results that relate to traveling primarily by plane, and not, for example, a comparison of the livability of these cities. Google will highlight various flight options in its built-in flight comparison, while to find train tickets you need to scroll down further.

These results are by no means predefined but instead a result of algorithmic curation. Even without personalization, search result lists are uniquely created from specific content optimized for specific searches, search engine algorithms, and a user's query and location.

You can try this yourself with these and other cities. But note that the use of quotation marks, the order of the cities or local versus English spellings can make a difference, since so many companies are trying to optimize for specific searches

Any reader familiar with Google search knows that those alternative results we outlined [require other queries](#). Such queries would need to explicitly establish that the search is about something other than buying clothes or flights. For example by querying "summer clothes colors" or "Berlin Stockholm livable."

In any case, the default options that the algorithms select and curate shape what we think as the default. If we are not careful and reflective about our own aims when searching, it will also affect at least some people's actions. And these actions have very real environmental implications.

Environmental damage as algorithmic harm

We suggest calling these environmental implications "algorithmically embodied emissions." By this, we mean emissions potentially contained in the content that algorithmic information systems—such as search engines or a Facebook or TikTok feed—suggest as their default option.

Our work so far is conceptual though we hope to develop a way to quantify the concept in the future. For now, we can observe that [search results](#) tend to suggest high-carbon practices.

And we can note that associated companies like flight comparison services or fast-fashion brands can also optimize their websites for better ranking in search engines. These companies tend to have larger budgets than their more sustainable alternatives (a small organic or repurposed summer clothes brand, for instance).

In recent years, researchers have highlighted the potential harm that algorithmic decision making can do to people, for example by reproducing [racial](#) or [gender biases](#). This is often called [algorithmic harm](#).

The concept of algorithmically embodied emissions asks us to take algorithmic harm even further. It shows that algorithmic decision making has real impacts on both people and planet.

It's also an example of how [algorithmic](#) decision making has higher-order effects beyond the immediate harm done to individuals. In other words: it matters how algorithms function and shape our actions. While the climate crisis accelerates, we have only just started to interrogate how [algorithms shape how we think about and act towards the environment](#).

In response to this article, a Google spokesperson said:

On Google Search, our goal is to connect people with timely, relevant and helpful information to make the sustainable choice an easier choice. We fundamentally design our Search ranking systems to surface high quality, reliable information on topics like [climate change](#). To complement those efforts, we've also developed a number of features to give people helpful context to make informed decisions about sustainability, including helping people quickly access information about the environmental impact of goods and services that they see in results. We collaborate with thousands of partners across multiple industries—from cities and governments to companies and nonprofits—to advance sustainability and climate progress.

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