

A tailored web, filtered to your personal profile

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For most internet users the primary information problem is in finding the right information in the sea of possible sources. The challenge isn't just like finding a needle in a haystack, it's more like finding the most appropriate needle in a haystack that contains many, many needles. To solve this challenge information services such as search engines, news feeds and recommender systems offer service personalization. Based on a profile constructed from the user's past behaviours, logged personal details, network of acquaintances and any other information the system can get access to, a personalization algorithm decides which information to prioritize and which information to hide from the user.

How much personal information should people surrender for the convenience of tailored data? What is the impact of increasingly sophisticated algorithmic filtering on people's skills for critically evaluating the results they are presented with? How is this affecting people's agency in information acquisition? Will the lived experience be a regression back to the passive TV couch potato? Given the general lack of transparency about the personalization profiles and the algorithms that are used for information tailoring, how much of a risk is there that information, and subsequent behavior, is manipulated without the user's knowledge? If the database containing the personalization profiles is hacked into, how vulnerable will the users be to identity theft, finely tuned phishing attacks and other malicious uses of their profiles?

These are just some of the ethical, social and security questions that are raised by the increasing use of personalization algorithms.

We therefore propose a research programme aimed at:

- identifying and studying the socio-psychological impact of personalized filtering;
- helping people understand and regulate the level of privacy intrusion that is traded for personalization;
- developing methodologies to probe for undesired biasing of provided information;
- engage with corporate information service providers to reinforce ethical practices.

Such a research programme might include

- Technical development of tools:
 - Black-box testing kit for examining the personalization profiles used by information services.
 - Information bias detection system for identifying covert manipulation
 - A two-layer information provision architecture that decouples the delivery of non-personalized information by service providers from a user owned/controlled system for personalized ranking of the information.
- Psycho-social research on the impact of personalized information filtering on:

- General exploration-exploitation trade-off in action selection
- Attitudes towards trust and critical evaluation of information
- Cybersecurity:
 - Protection against misuse of personalization profiles for phishing related social engineering
- Policy:
 - Development of guidelines for responsible innovation and use of personalization systems, protecting the privacy and freedom of access to information of users.
- Public engagement:
 - Develop educational material to help people understand how personalized information are filtered so that they can better evaluate the information they receive.