Communicating the Algorithmic Self to Users

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When you watch a movie on Netflix, look at an ad on a website, or click on a recommended products on Amazon, you consume this recommended information generated based on your algorithmically inferred attributes and interests. During recent years, many online platforms have started to automatically infer users' attributes from available online data in order to provide users with personalized information. However, it usually remains unknown to users what these algorithmically-inferred attributes are, how they are inferred or how they are used. This *opacity*, along with the susceptibility of algorithms to bias, can result in users' lack of trust of and satisfaction with such systems. For example, the opacity of online behavioral advertising in what data they use to infer personality traits has resulted in privacy concerns and mixed feelings towards personalize ads [1,2].

In this summary, we discuss the existing challenges in the realm of algorithmic inference of users' attributes--the "*algorithmic self*"--, the necessity of adding visibility into this process, and how this visibility benefits both users and the system.

The Invisibility of the Algorithmic Self: During recent years, some online platforms have started to provide users with a view that presents a user's algorithmic-self (or a portion of it). Facebook and Google ad preferences views are some examples [3,4]. Previous work, however, has shown that these views are usually buried within in the system interface, resulting in the invisibility of users' algorithmic self. For example, in a study with 32 diverse demographic participants, none of the participants were aware of such views [5]. Therefore, adding more clues to the main interface of a system to make users aware of such views is a necessity if online platforms want to gain users' trust and satisfaction.

Lack of Adequate Explanations: Another challenge in presenting users' algorithmic self is providing adequate explanation about how an attribute is inferred. While some recent online systems such as Facebook and Google ad preferences provide some explanation about how an attribute is inferred, it is not usually adequate and contains a vague explanation such as "this attribute has been inferred based on your clicks on ads and your online activity." While we are not an advocate for full transparency (due to the enormous complexity that full transparency might cause for users), we argue that the online platforms that generate data-driven personas for the purpose of targeting users

with the most related information need to provide users with enough transparency about how these personas are curated.

Lack of Agency: While increasing the visibility of users' algorithmic selvesand adding sufficient explanations to them can increase users' trust for and satisfaction with a system, it is not necessarily enough. What if a user can see her algorithmic self and how it is generated, but she does not have the agency to change her algorithmic self if she believes it is not correct? Providing users with the ability to influence their algorithmically-inferred attributes is of great importance; previous work has shown that a higher feel of control over their interaction with an algorithmic system leads users to an increased level of engagement and satisfaction with the system [6]. Another benefit for giving users' agency to revise their algorithmic self is providing the algorithms with a better feedback on their outputs. This feedback can help online platforms to improve the accuracy of the algorithmic methods that infer users' algorithmic-self. This is particularly helpful since the ground truth for evaluating a users' algorithmic self is the user herself. Therefore, providing the user with the ability to evaluate and revise their algorithmic self not only benefits the user, but also improves the system's performance.

We believe the "Data-Driven Personas and Human-Driven Analytics" workshop is a great place for us to have a discussion about the aforementioned challenges in presenting the algorithmic self to users and the possible solutions to mitigate these challenges.

References

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