An interactive prototype to spot Fake News in young people

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Abstract. Do you know how to identify Fake News? This project intended to ensure that young people under twenty years with access to the internet and social networks can identify important elements of news to distinguish from fake ones. The creation of an interactive prototype will be guided taking into account the importance of the user experience (UX) for the development of the interactive prototype. This paper explains the main steps in the methodology in order to recommend some issues to spot Fake News in young people.

Keywords: Fake News, User Center Design, User Research Methods, User Experience

1 Introduction

The term “fake news” (FN) was officially ushered into the lexicon when the Oxford Dictionary added the term in 2017 [1]. While the term is frequently used and definitions vary, the problem of deceptive data is serious and exposes a profound and underlying flaw in information and network security models. This flaw is trust in entities without verification of the content that they exchange.

“Trust but verify” [2] is an old proverb that, until recently, resulted in trust at the expense of verification. Fake news has become a social phenomenon due to the confusion they cause in society. Every day, individuals through social networks are surrounded by large amounts of information of all kinds, however, more information is not synonymous with having reliable data, on the contrary, increasingly more sites and publications dedicated to disseminate proliferate distorted information or, worst, totally fake [3]. False information is very harmful to society, as it can escalate to unexpected levels and manipulate the process of making important decisions such as political elections [4]. Malicious processes of this nature directly affect our lives, since they involve our environment and our person. The purpose of this study, is to contribute to the right identification of the different characteristics of a news item, in order to improve the users' criteria when browsing through social networks (Facebook in particular) and internet pages. We focus on young people, because they are the

ones who naturally experience digital technology also, they receive and spread large amount of data and news on internet.

2 Background

Detecting fake news in social media has been an extremely important, yet technically very challenging problem. In one study, human judges, by a rough measure of comparison, achieved only 50- 63 % success rates in identifying fake news [5]. The most of fake news detection algorithms try to linguistic cues [6]. Several successful studies on fake news detection have demonstrated the effectiveness of linguistic cue identification, as the language of truth news is known to differ from that of fake news [7]. For example, deceivers are likely to use more sentiment words, more sense-based words (e.g., seeing, touching), and other-oriented pronouns, but less self-oriented pronouns.

Compared to real news, fake news shows lower cognitive complexity and uses more negative emotion words. However, the linguistic indicators of fake news across different topics and media platforms are not well understood. Rubin, points out that there are many types of fake news, each with different potential textual indicators [5]. This indicates that using linguistic features is not only laborious but also topic/media dependent domain knowledge, thus limiting the scalability of these solutions.

In addition to lexical features, speaker profile information can be useful [8]. Speaker profiles, including party affiliations, job title of speaker, as well as topical information which can also be used to indicate the credibility of a piece of news. For the study use profile information, [9] proposes a hybrid CNN model to detect fake news, which uses speaker profiles as a part of the input data. The Long-Short memory network (LSTM), as a neural network model, is proven to work better for long sentences [10]. Attention models are also proposed to weigh the importance of different words in their context. Current attention models are either based on local semantic attentions [11] or user attentions [12].

The difficulty comes partly from the fact that even human beings may have difficulty identifying between real news and fake news. Even worse, young people are not aware of the information they receive and replicate. This is the main reason of using User Center Design in order to identify the real experience in our target user.

For the development of this study, the User Experience (UX) will be considered as a core point in its elaboration, in order that the product really covers the specific needs of the user and understands their interaction with the environment.

3 User Research Methods

The UX process consists of several stages, in which the main objective is to identify the problem to be treated.

The first stage was to generate a brainstorm that would lead to a theme that represents a real problem in the environment. The result was the theme of Fake News.

The second stage consisted of using the "Persona" methodology, which is a very useful method to define the different user profiles for the study [13]. After analyzing the different profiles, we decided to analyze young people (16-20-year-old), since young people are the largest consumers of Social Networks, where the Fake News usually circulates (Fig. 1).

Fig. 1. Selected user based on "Persona" methodology.

It was important to collect information directly from the user, for this step some interviews were conducted [5]. In the first phase some interviews were applied in one group (16-20 years old) with different educational levels.

With this interviews, individuals were questioned about their Internet consumption and how they search for information and specially how they react with news. Through these interviews, relevant data were found such as:

- Young people trust, especially in news with a character of urgent (natural disasters, for example) in traditional media, especially on television and radio.

After that, some surveys were conducted in order to deepen the information obtained. With this surveys we discover the capacity of young people to identify Fake News and the reliability they have in the information they find in their day to day on social networks and websites. Similarly, it was verified if the user relied on traditional media and what verification strategy they used to identify fake news.

From the data obtained in the surveys, a series of premises similar to those of the interviews was obtained, but with a greater degree of precision, such as:

- Young people use the Internet not only for entertainment, it is also one of their main sources to conduct school researches and a way to obtain information of all kinds (tutorials, films, images, etc.).

- They do not trust completely in what they find in social networks, they have many doubts and prefer to check what was discovered in another type of media (mainly traditional).
- They try to consult multiple sources. They do not usually share information immediately, many of them prefer to verify the veracity of it before doing so.
- They tend to give importance only to the things they like or get their attention.

Finally, the needs of the users were analyzed and our target user was identified. These young people of school age were selected due to their high Internet consumption for their various tasks and their adaptation to technology. In addition, they have had greater contact with social networks.

Once knowing our user, we had to check if the findings were true, that is why the following study was designed.

The study

Once the users were identified and knowing their consumption, an interactive prototype was used to verify the true reaction of the users when they interact with a fake news (see Fig. 2).

The prototype developed is an interactive application where the user interacts and try to identify some fake news from the good ones. It can be seen like an interactive game because the user has a reduced time to decide if a news is fake or not. [4].

The interactive prototype was originally planned to have two modes, one individual and one in a competition of maximum four people.

In the first case, the individual starts almost immediately and interact with the prototype. In the first step, the instructions are given. Then, the interaction starts with five questions that were classified as intermediate (some news that are not so easy to identify if they are fake or not), once those five questions have been answered the prototype detects the level of expertise of the participant and continues with five more questions (either of a lower or higher difficulty) in order to have a complete round of ten questions.

Fig. 2. Example of the news displayed.

Finally, the prototype based on your answers, shows the level of real experience you have to identify fake news. Based on this level of experience, the prototype shows some simple recommendations to verify fake news (see Fig. 3).

In the case of the multiplayer, each one would have the opportunity to scan through a QR code an extension of the interface to run the prototype using their smartphone. In this case, the prototype screen would only serve as a dashboard that would show, in real-time, the questions, the response options, the progress of the participants, the highest and lowest scores and the problems of each user to identify fake news.

Both prototype modes would allow at the end to know the level that the user has to identify fake news, a feedback is show in all cases with the recommendations strategies to identify fake news. Once this process is finished, an infographic is generated in order to print it or save it with the recommendations proposed by the prototype (see Fig. 4).

These recommendations [14] that are shown to the user can be summarized in:

- Consider the source. The user needs to investigate the site, its mission and its contact info.
- Read beyond. Headlines can be outrageous in an effort to get likes, the user need to read the whole story.
- Check the author. The user need to verify the author and their credibility.
- Supporting sources. The user need to determine if the info given actually supports the story.
- Check the date. Reposting old news stories doesn't mean they are relevant to current events
- Is it a joke? The user needs to research the site and author.
- Ask the experts. Ask a professor or a librarian.

Fig. 3. First feedback of the prototype

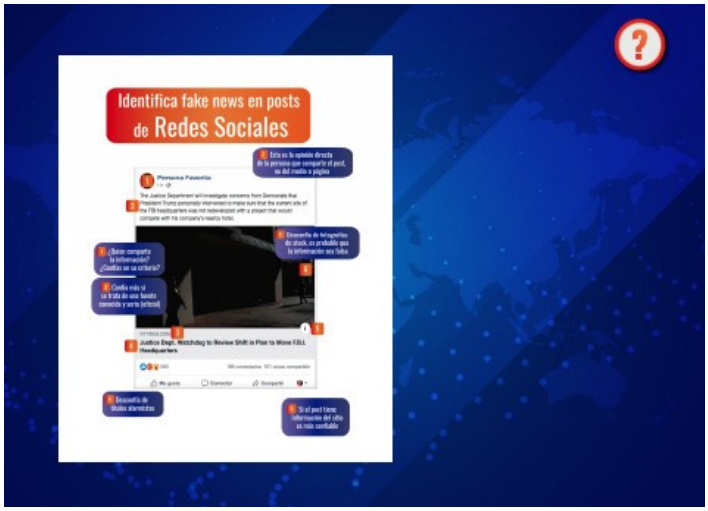

Fig. 4. Infographics generated as a result of the interaction with the prototype

User Testing and evaluation

For this phase, two evaluation studies were performed. First a set of heuristic evaluations were performed, where the viability of the prototype was verified. This

study was conducted by 30 users between 16 and 20 years old and the items that were verified were: simplicity, consistency, feedback, affordance, flexibility, perceptibility and ease of use.

After that a real user testing was performed. The study was conducted with 5 real users, the result was recorded in order to be analyze and improve the prototype (Fig. 5).

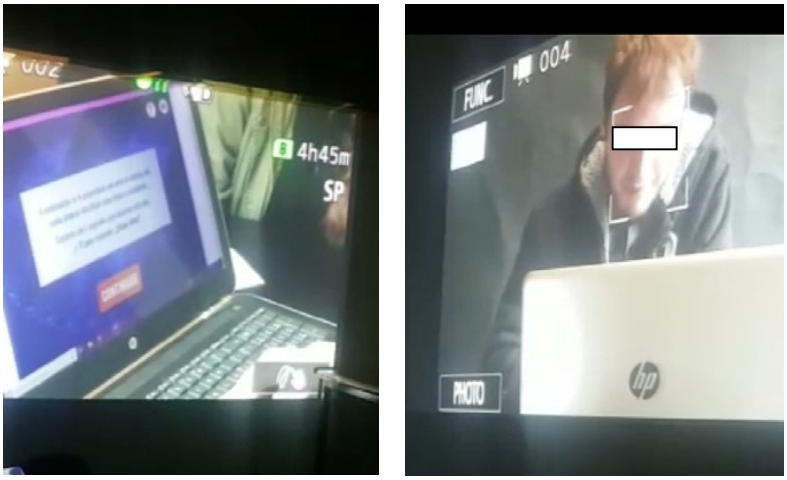

Fig. 5. User testing

Conclusions

This paper proposes a prototype that help the user to spot fake news. This is a complete methodology (User Center Design) to propose a solution of the real problem. The project starts with the user identification and its problematic. Then a prototype implementation process is made. Finally, a complete evaluation was conducted in order to verify the viability of the proposal.

Young people with their great interaction with technology and in particular with social networks, must have tools that help them make better decisions. Fake news circulates freely and daily on social networks and it is important to make young people aware that not all news we receive is real and that we must learn to identify fake news. The prototype proposal tries to raise awareness about this problem so that young users can navigate safely and reliably on the networks.

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