The GenderMag Recorder's Assistant

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***Abstract*—Building software systems is hard work, with challenges ranging from technical issues to usability issues. If the technical issues are not addressed, the software cannot work -- but if the usability issues are not addressed, many potential users and customers are not even interested in whether it works. Further, usability must be inclusive: software needs to support diverse sorts of users. To help software professionals address gender-inclusive usability, we have created the GenderMag Recorder's Assistant tool. This Open Source tool is the first to semi-automate evaluating gender biases in software that is being designed, developed, or maintained. In this showpiece, we will demo the tool and encourage attendees to get involved in using it and improving upon it.**

Keywords—GenderMag, gender inclusiveness

I. Introduction and Background

In this showpiece, we will demonstrate a new tool called the GenderMag Recorder's Assistant [7]. The tool is an Open Source project implemented as a Chrome extension, and is freely downloadable.

The Recorder's Assistant semi-automates use of the GenderMag method. GenderMag is a method to find gender bias "bugs" in software that is being designed, developed, or maintained [3]. GenderMag's foundations lie in research on how people's individual problem-solving strategies sometimes cluster by gender. At GenderMag method's core are five problem-solving facets that matter to software's gender-inclusiveness: a user's motivations for using the software, their information processing style, their computer self-efficacy, their attitude towards risk, and their ways of learning new technology.

Evaluations of GenderMag's validity and effectiveness have produced strong results. In a lab study, professional UX researchers were able to successfully apply GenderMag, and over 90% of the issues it revealed were validated by other empirical results or field observations, with 81% aligned with gender distributions of those data [3]. GenderMag was also used to evaluate a Digital Library interface, uncovering significant usability issues [4]. In a field study evaluating GenderMag in 2- to 3-hour sessions at several industrial sites [2, 5], software teams analyzed their own software using GenderMag, and found gender-inclusiveness issues in 25% of the features they evaluated. In Open Source Software (OSS) settings, OSS professionals used GenderMag to evaluate OSS tools and infrastructure and found gender-inclusiveness issues in 32% of the use-case steps they considered [6]. In a longitudinal study at Microsoft, variants of GenderMag were used to improve at least 12 teams' products [1].

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II. The Recorder's Assistant

The Recorder's Assistant is the first tool to semi-automate the identification of gender bias "bugs" in the user-facing layer of software. VL/HCC attendees who build or evaluate visual languages and interfaces can use it to evaluate the systems they are helping to design, develop, or maintain.

To use the Recorder's Assistant, a software team navigates via the browser to the app or mockup they want to evaluate, then starts the tool from the browser menu. The main sequence is to view a persona (Fig. 1(c)) and proceed through the scenario of their choice from the persona's perspective, one action at a time. At each step, the tool's "context-specific capture" captures screenshots about the action the team selects (Fig. 1(a)), and records the answers to questions about it (Fig. 1(b)). The tool saves this sequence of screenshots and questions/answers to form a gender-bias "bug report."

The full VLHCC'18 paper [7] describes the tool and presents an empirical evaluation.

Fig. 1: The Recorder's Assistant tool during an evaluation of a mobile time-and-scheduling app. (Left): The app being evaluated is displayed with (a) a rectangle around the action the evaluators are deciding if a user like "Abby" will take. (Right): A blow-up of portions of the GenderMag features for the app: (b) the GenderMag question the team is answering at the moment, including a checklist of Abby's facets; and (c) a summary of the persona the team has decided to use (in this case, Abby).

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III. HOW WE WILL PRESENT THE TOOL

We will present the tool during the Showpiece Reception via live demo's and a poster. A short video of a GenderMag session is also available at http://gendermag.org/.

IV. CONCLUDING REMARKS

The GenderMag Recorder's Assistant is an Open Source project. We invite people to download and/or contribute to it at http://gendermag.org.

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