

193.067 Free and Open Technologies
TU Wien, winter term 2019/2020.
Students:
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Paper: Gender differences and bias in Open Source and Open Data

Idea: To see how strong the status quo of bias with respect to gender within the realms of open technologies is and to compare it with past states, maybe even produce valid assumptions about future developments.

Goals: To find and highlight a major societal issue using scientifically sound methods for data acquisition and analysis and to present the results to the public in a meaningful and easy to understand way.

Difficulty: Difficult, since research on this topic has just recently started which makes finding trustworthy sources and data a very difficult task.

Subjects: Gender, Bias, History of information technology, Psychology, Tribalism, Human history, Group dynamics, Open Data, Open Source, Human Interaction, Social sciences

Deliverables:

1. 1x Academic Paper
2. 1x Presentation

Requirements and costs:

- 2x Human workforce
- ~10h per week per workforce
- 2x Laptops
- 2x Internet access

Milestones:

- Select 4 good references regarding the subject
 - o Read through lots of papers and select the most fitting ones
 - o In short words, write down the most important or interesting aspects of your findings
 - o Create a short narrative based on those words so that a structure can be derived from the narrative
- Create a rough structure (chapters & sections)
- Create a cover page & introduction
- Write first chapter
- Write second chapter

- ...
- Write conclusion
- Write future work
- Write abstract
- Search for possible mistakes
 - o Make sure the paper is scientifically sound
 - o Make sure references were user adequately
 - o Make sure the references are right and working
 - o Make sure there are no syntactical issues (grammar, etc.)

Estimation: ~10h per week per workforce

Bonus: None

References:

- Terrell, Josh & Kofink, Andrew & Middleton, Justin & Raine, Clarissa & Murphy-Hill, Emerson & Parnin, Chris. (2016). *Gender bias in open source: Pull request acceptance of women versus men*. 10.7287/PEERJ.PREPRINTS.1733V1.
Link: https://peerj.com/articles/cs-111/?utm_source=TrendMD&utm_campaign=PeerJ_TrendMD_0&utm_medium=TrendMD
Abstract: Biases against women in the workplace have been documented in a variety of studies. This paper presents the largest study to date on gender bias, where we compare acceptance rates of contributions from men versus women in an open source software community. Surprisingly, our results show that women's contributions tend to be accepted more often than men's. However, when a woman's gender is identifiable, they are rejected more often. Our results suggest that although women on GitHub may be more competent overall, bias against them exists nonetheless.
- Reagle, Joseph & Rhue, Lauren. (2011). *Gender Bias in Wikipedia and Britannica*. *International Journal of Communication*. 5. 1138-1158.
Link: <https://ijoc.org/index.php/ijoc/article/view/777>
Abstract: Is there a bias against women's representation in Wikipedia biographies? Thousands of biographical subjects from six sources are compared against the English-language Wikipedia and the online Encyclopaedia Britannica with respect to coverage, gender representation, and article length. We conclude that Wikipedia provides better coverage and longer articles, and that it typically has more articles on women than Britannica in absolute terms, but we also find that Wikipedia articles on women are more likely to be missing than are articles on men relative to Britannica. For both reference works, article length did not consistently differ by gender.
- Graells-Garrido, Eduardo & Lalmas, Mounia & Menczer, Filippo. (2015). *First Women, Second Sex: Gender Bias in Wikipedia*. 10.1145/2700171.2791036.
Link: <https://dl.acm.org/citation.cfm?id=2791036>
Abstract: Contributing to history has never been as easy as it is today. Anyone with access to the Web is able to play a part on Wikipedia, an open and free encyclopedia. Wikipedia, available in many languages, is one of the most visited websites in the world and arguably one of the primary sources of knowledge on the

Web. However, not everyone is contributing to Wikipedia from a diversity point of view; several groups are severely underrepresented. One of those groups is women, who make up approximately 16% of the current contributor community, meaning that most of the content is written by men. In addition, although there are specific guidelines of verifiability, notability, and neutral point of view that must be adhered by Wikipedia content, these guidelines are supervised and enforced by men. In this paper, we propose that gender bias is not about participation and representation only, but also about characterization of women. We approach the analysis of gender bias by defining a methodology for comparing the characterizations of men and women in biographies. In particular we refer to three dimensions of biographies: meta-data, language usage, and structure of the network built from links between articles. Our results show that, indeed, there are differences in characterization and structure. Some of these differences are reflected from the offline world documented by Wikipedia, but other differences can be attributed to gender bias in Wikipedia content. We contextualize these differences in feminist theory and discuss their implications for Wikipedia policy.

- Kofink, Andrew. (2015). *Contributions of the under-appreciated: gender bias in an open-source ecology*. 83-84. 10.1145/2814189.2815369.

Link: <https://dl.acm.org/citation.cfm?id=2815369>

Abstract: Female software developers account for only a small portion of the total developer community. This inequality is caused by subtle beliefs and sometimes interactions between different genders and society, referred to as implicit biases and explicit behavior, respectively. In this study, I mined user contribution acceptance from a popular software collaboration service. The contributions of female developers were accepted into open-source projects with roughly equivalent success to those of males, partially discounting recent findings that explicit behavior accompanies implicit gender bias, while bolstering the claim that implicit bias is cultural, rather than as a result of innate differences.



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