Women accepted as better coders as long as no gender link

February 13 2016, by Nancy Owano

Wow, gender bias has appearances of residing in computer programming—off the charts, so to speak, but accorded serious attention in a new study. The findings come from scientists at California Polytechnic State University and North Carolina State University.

"While our big data study does not definitely prove that differences
between gendered interactions are caused by bias among individuals, the
trends observed in this paper are troubling. The frequent refrain that
open source is a pure meritocracy must be reexamined," the researchers
stated.

They worked with publicly available information on about 4 million
GitHub users logged in to the service on April 1 last year. No joke.

They used a gender-linking technique to identify the gender of just over
35 percent of the users, around 1.4 million, said MIT Technology Review.

So what exactly was this gender-linking technique? The BBC said the
numbers they were able to identify were from user profiles or because
their email addresses could be matched with the Google + social
network. "The researchers accepted that this was a privacy risk but said
they did not intend to publish the raw data."

Explained further in MIT Technology Review: "An analysis of pull
requests, or users' submissions of new code to the projects of other
software developers, revealed that code written by women was accepted
78.6 percent of the time. For men, the figure was 74.6 percent. But when
female coders did indicate their gender, they were far less likely to have
their code accepted, with their approval rate plummeting to 62.5
percent."

BBC summarized the research: "Computer code written by women has a
higher approval rating than that written by men - but only if their gender
is not identifiable."

According to the study authors, "gender bias pervades open source."
They wrote that "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."

The paper defined pull requests as "proposed changes to a software project's code, documentation, or other resources."

Actually, the paper made a number of observations in addition to the fact that women were more likely to have pull requests accepted than men were. Among other findings: women's pull requests were less likely to serve an immediate project need; changes were larger; and acceptance rates were higher across programming languages.

Authors are Josh Terrell, Andrew Kofink, Justin Middleton, Clarissa Rinear, Emerson Murphy-Hill and Chris Parnin. Affiliations are listed as the Department of Computer Science, Cal Poly, San Luis Obispo, and Department of Computer Science, North Carolina State University.

The paper is awaiting peer review, said the BBC, and it remains to be seen how other experts will appraise the results.

**More information:** Gender Bias in Open Source: Pull Request Acceptance of Women Versus Men (PDF):
peerj.com/preprints/1733.pdf

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