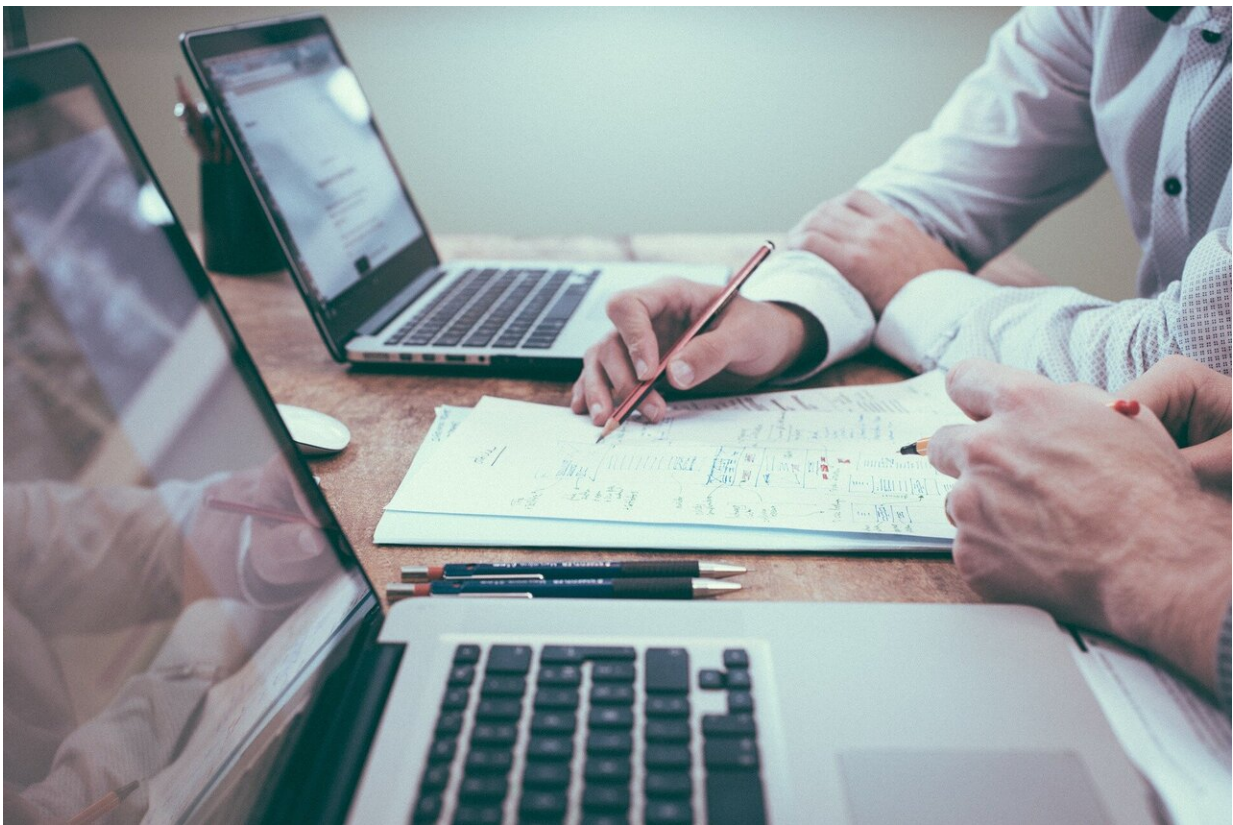# Personality plays key role in whether developers can contribute to open source projects

March 16 2020

Credit: CC0 Public Domain

Your personality could significantly impact your ability to contribute to open source projects, according to a new study by researchers at the

University of Waterloo.

Open source projects are online spaces where software developers work together to improve computer code that is made available to anyone. Each project is managed by a person whose job it is to accept or reject the offer of help from a software developer.

In a recent study, the Waterloo researchers found that social factors, such as past experience, remain the most influential element in the acceptance or rejection of online contributors' work. But they also found that personality traits are an essential part of the decision.

"Often in completing open source work, people think that only their ability to do the task matters," said Meiyappan Nagappan, a professor in Waterloo's David R. Cheriton School of Computer Science and co-author of the study. "But personality factors are also important because that's how your behavior comes out when you interact with other people.

"People who voluntarily work on open source projects need to be aware of how open they are to change and how conscientious they are, as these two personality traits will impact how willing people are to work with them," said Nagappan.

In undertaking the study, researchers evaluated data collected from the open source platform GitHub. They analyzed the personality traits of 16,935 active developers from 1,860 projects, each of which had at least 250 pull requests. A pull request is a mechanism developers use to notify other open source contributors working on the same project that they have completed a task.

The researchers then used the IBM Watson Personality Insights to retrieve the big five personalities of the software developers in GitHub. The big five personalities are openness, conscientiousness, extraversion,

agreeableness and neuroticism.

"We found that social factors are still more important than technical factors in getting your open source work accepted," said Alex Yun, a master's student in Waterloo's Faculty of Mathematics and co-author of the study. "We then examined the importance of personality factors and found that there might be biases involved in the acceptance or rejection of work done on open source platforms. Managers are more likely to accept a contribution from someone they know, or someone more agreeable than others even though the technical contribution might be similar."

The study, "Effects of Personality Traits on Pull Request Acceptance," was recently published in the journal *IEEE Transactions on Software Engineering*.

Provided by University of Waterloo