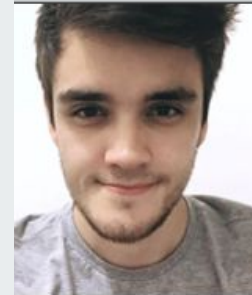


Who Gets a Patch Accepted First?

Comparing the Contributions of Employees and Volunteers



Gustavo
PINTO



Luiz Felipe
DIAS

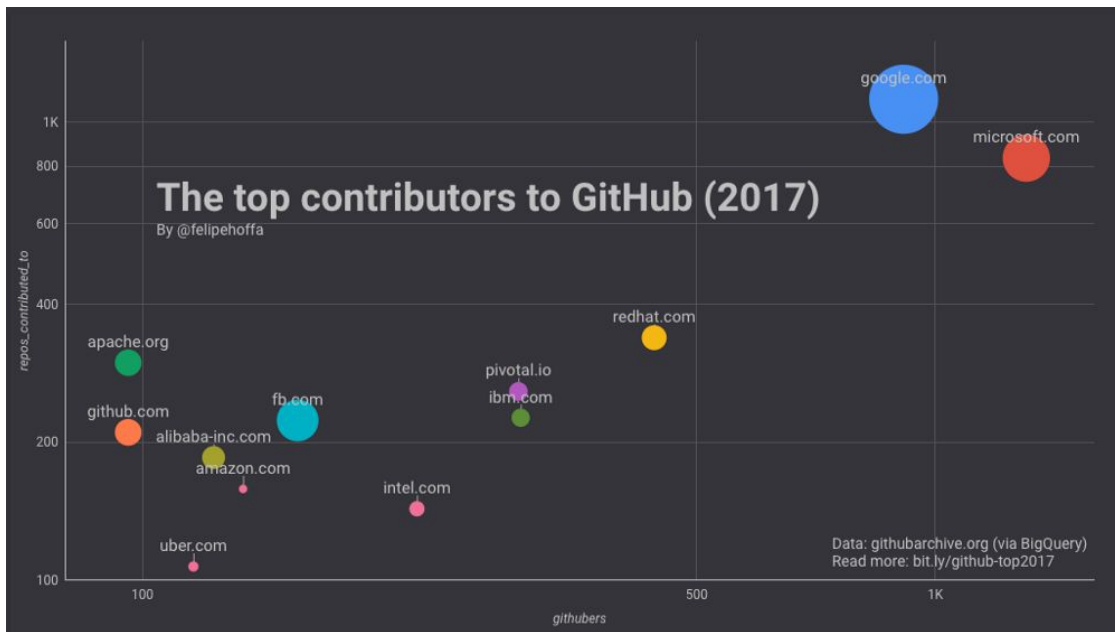


Igor
STEINMACHER

Motivation

On the challenges of open-sourcing proprietary software projects

Gustavo Pinto¹ · Igor Steinmacher² · Luiz Felipe Dias² · Marco Gerosa³



Apple Swift:

- 445K lines of code
- 576 developers
- 20,000+ stars in 3 weeks
- 15,500+ pull-requests after open-sourcing (Dec-2015)

Goal

Investigate the **differences** on the acceptance of patches submitted by **volunteers and employees** to **company-owned OSS** projects



RQs

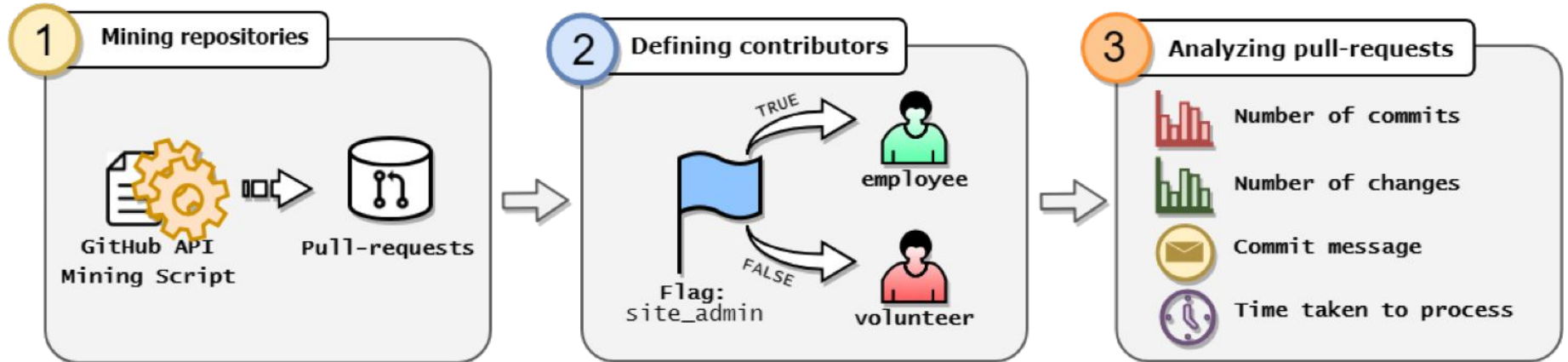
RQ1: Do volunteers have to try more than employees to have a patch accepted?

RQ2: Do volunteers have to wait much more than employees to have a patch processed?

RQ3: Do volunteers follow contributing best practices?



Method



RQ1: Do volunteers have to try more than employees to have a patch accepted?

Volunteers face 26× more rejections than employees.

Average of patches rejected and accepted per contributor:



Employees:

Rejected:

5.78

Accepted:

39



Volunteers:

Rejected:

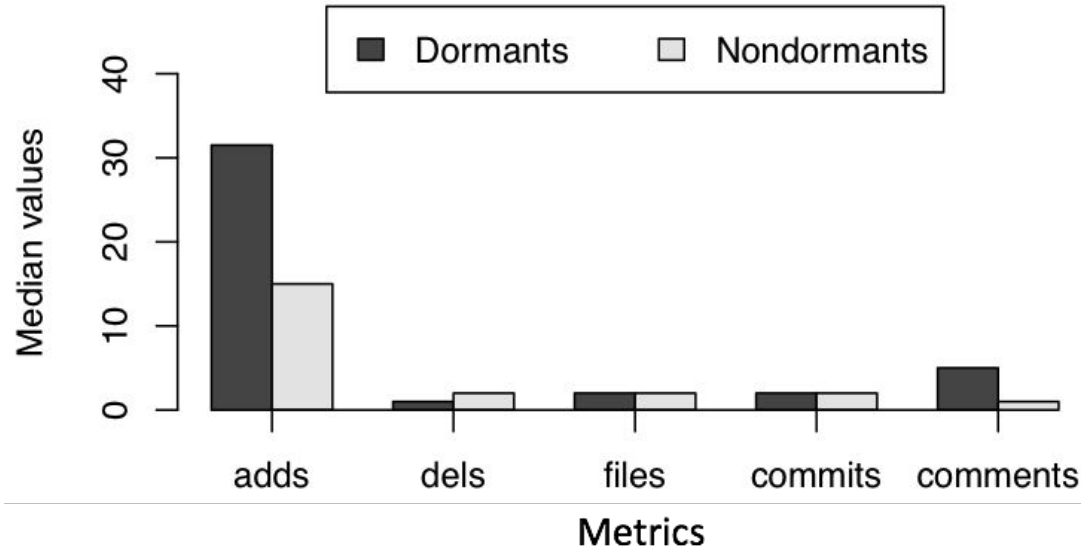
1.42

Accepted:

2.3

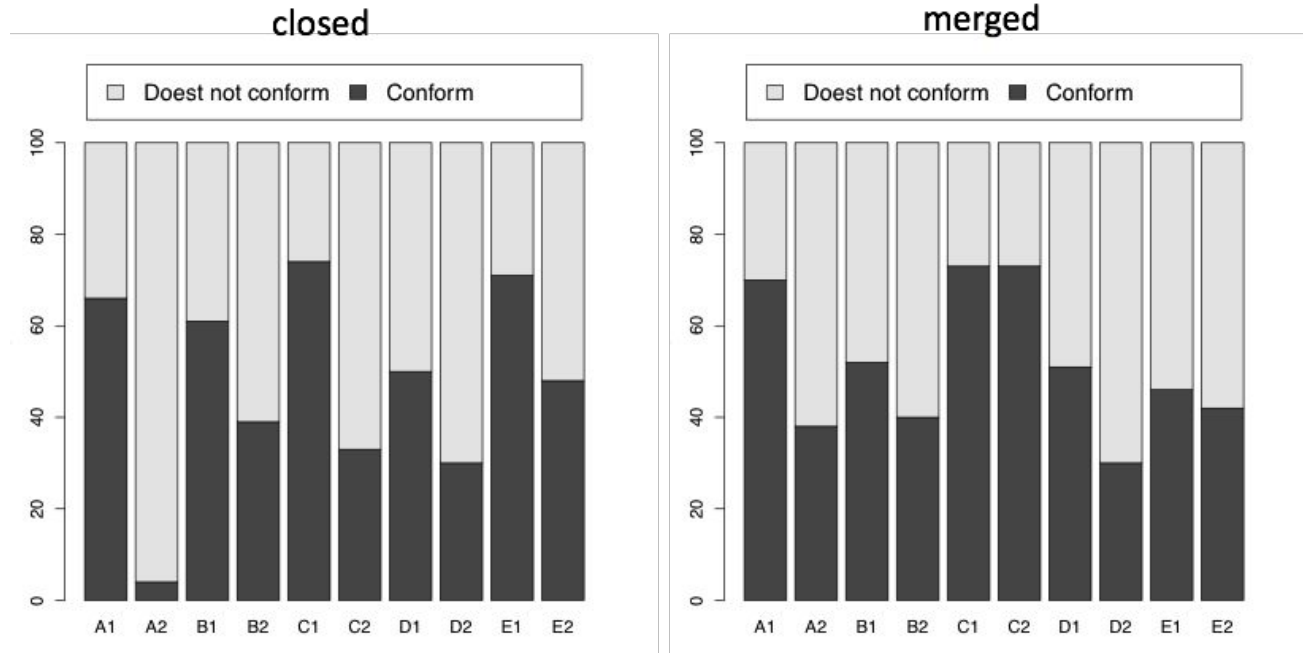
RQ2: Do volunteers have to wait much more than employees to have a patch processed?

Volunteers have to wait, on average, 11 days to have a patch processed.



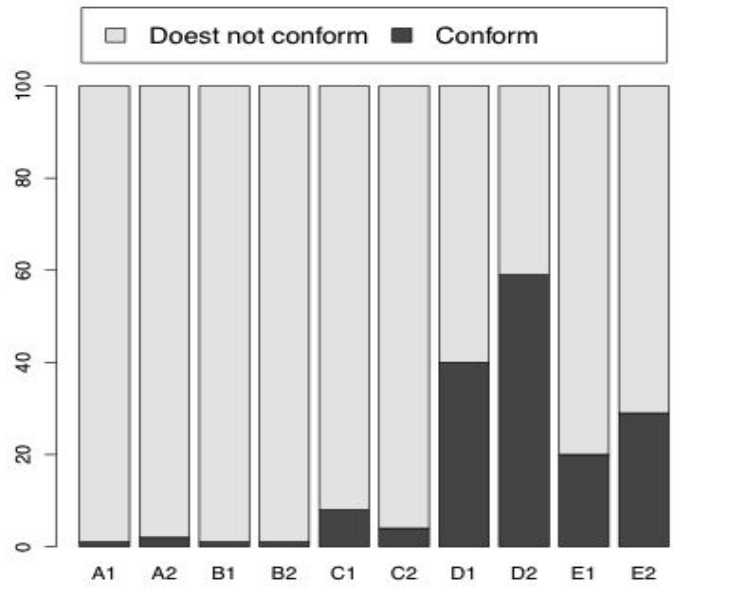
RQ3: Do volunteers follow contributing best practices?

BP1: Contribution should be small

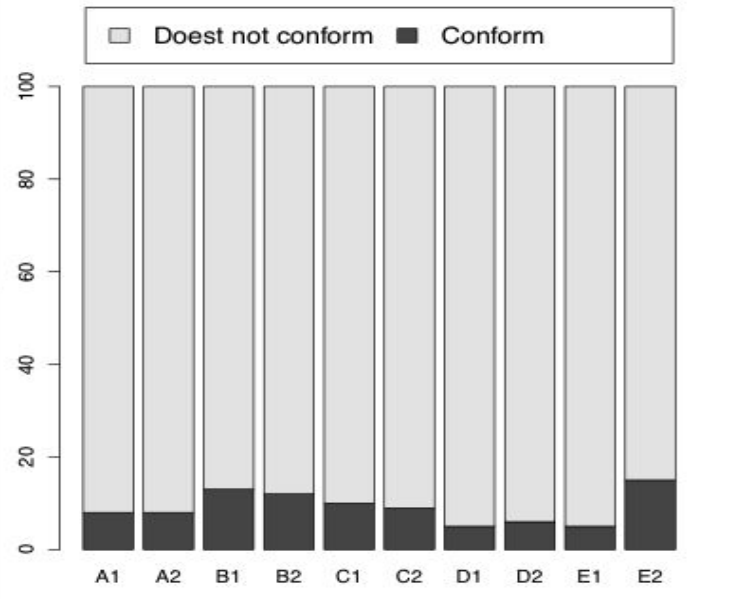


RQ3: Do volunteers follow contributing best practices?

BP2: The contribution should be accompanied with tests



BP3: The commit message should be descriptive





Conclusions

- Volunteers face more rejections than employees.
- Few employees are responsible for the majority of the the software development.
- Volunteers have to wait, on average, 11 days to have a patch processed (employees wait 2 days)
- 92% of the dormant pull-requests were submitted by employees.
- Best practices are not systematically followed
 - The practice that had the most adherence is commit messages written in English