

Does the First-Response Matter for Future Contributions? A Study of First Contributions

MSR2021 Registered Report



Noppadol
Assavakamhaenghan



Supatsara
Wattanakriengkrai



Naomichi Shimada



Raula Gaikovina
Kula

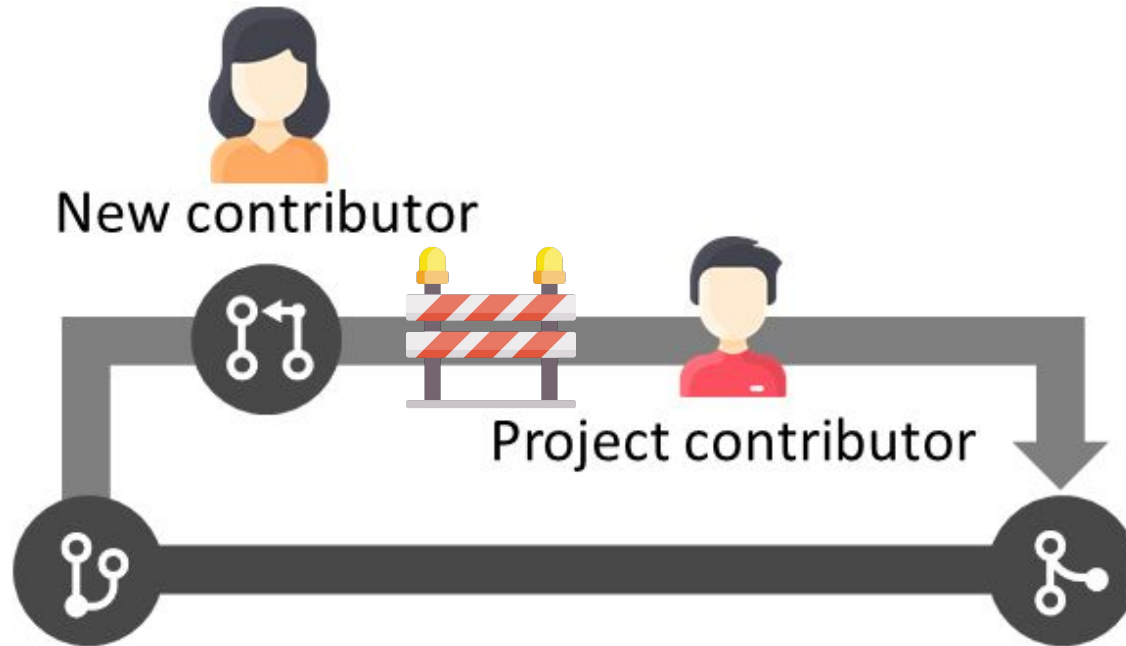


Takashi Ishio



Kenichi Matsumoto

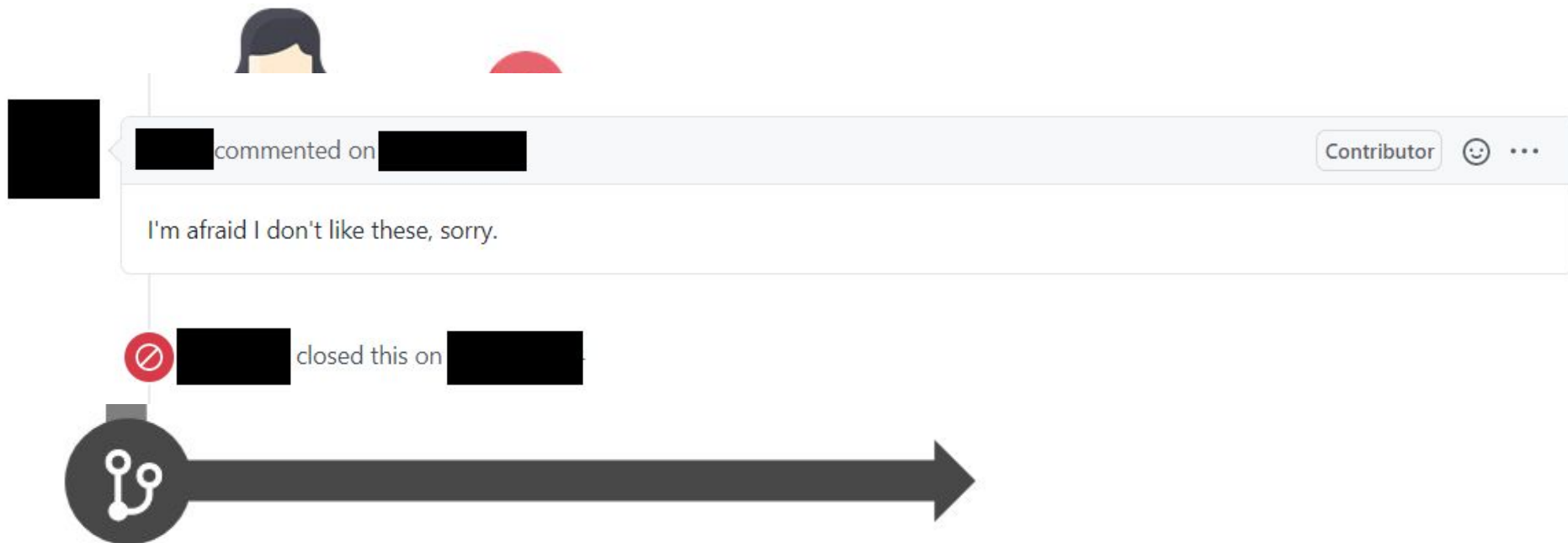
Open source software projects rely on a continuous stream of new contributors



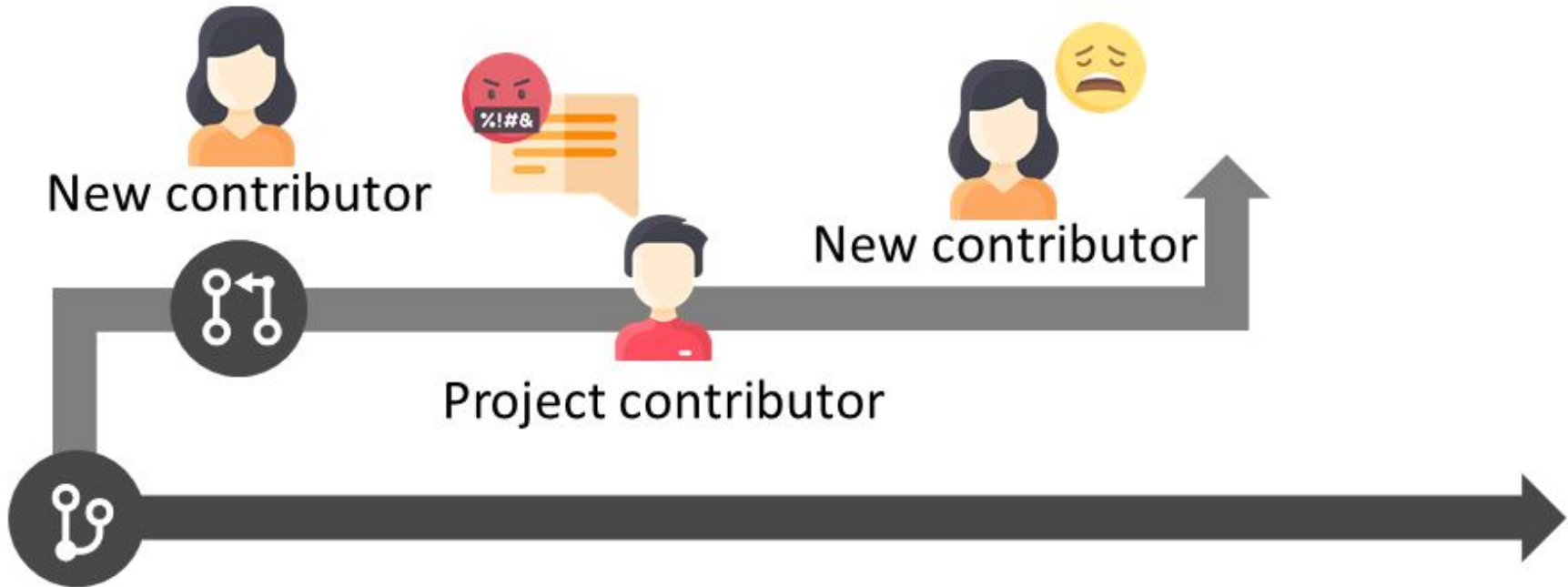
I. Steinmacher, I. Wiese, A. P. Chaves, and M. A. Gerosa, "Why do newcomers abandon open source software projects?" Proc. of the Inter. Workshop on Cooperative and Human Aspects of Soft. Engr., pp. 25–32, 2013.

I. Steinmacher, I. S. Wiese, T. Conte, M. A. Gerosa, and D. Redmiles, "The hard life of open source software project newcomers," in Proc. of the Inter. Workshop on Cooperative and Human Aspects of Soft. Engr., 2014, p. 72–78.

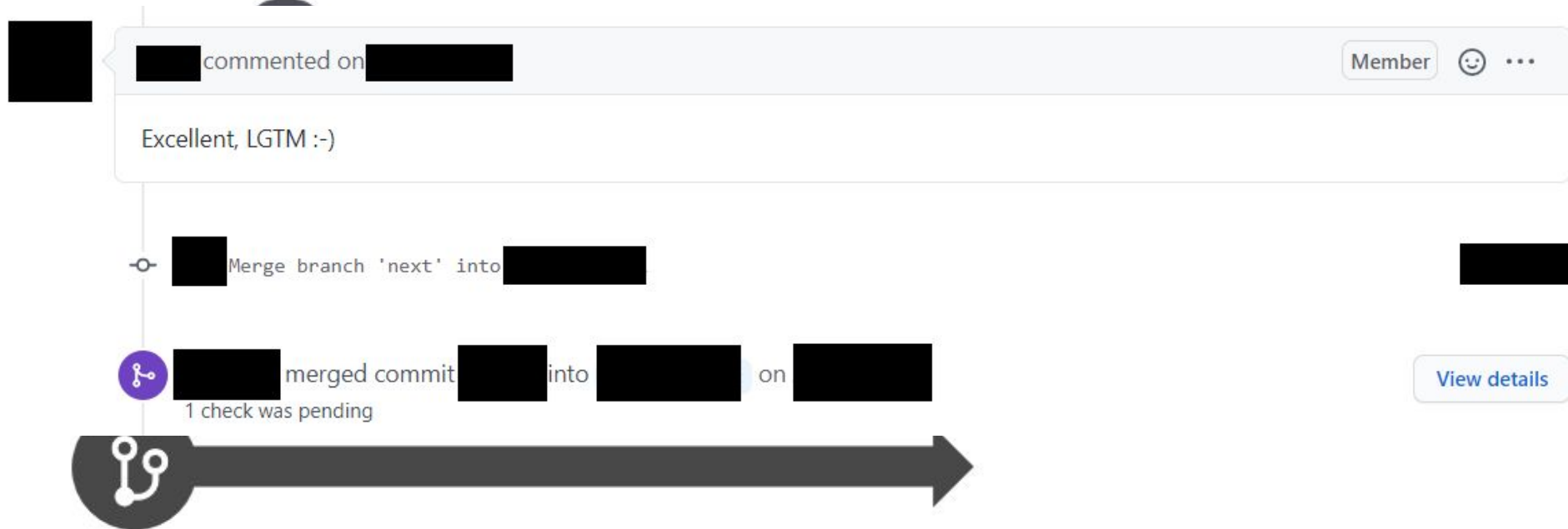
Social barrier is one of the critical barrier for new contributors



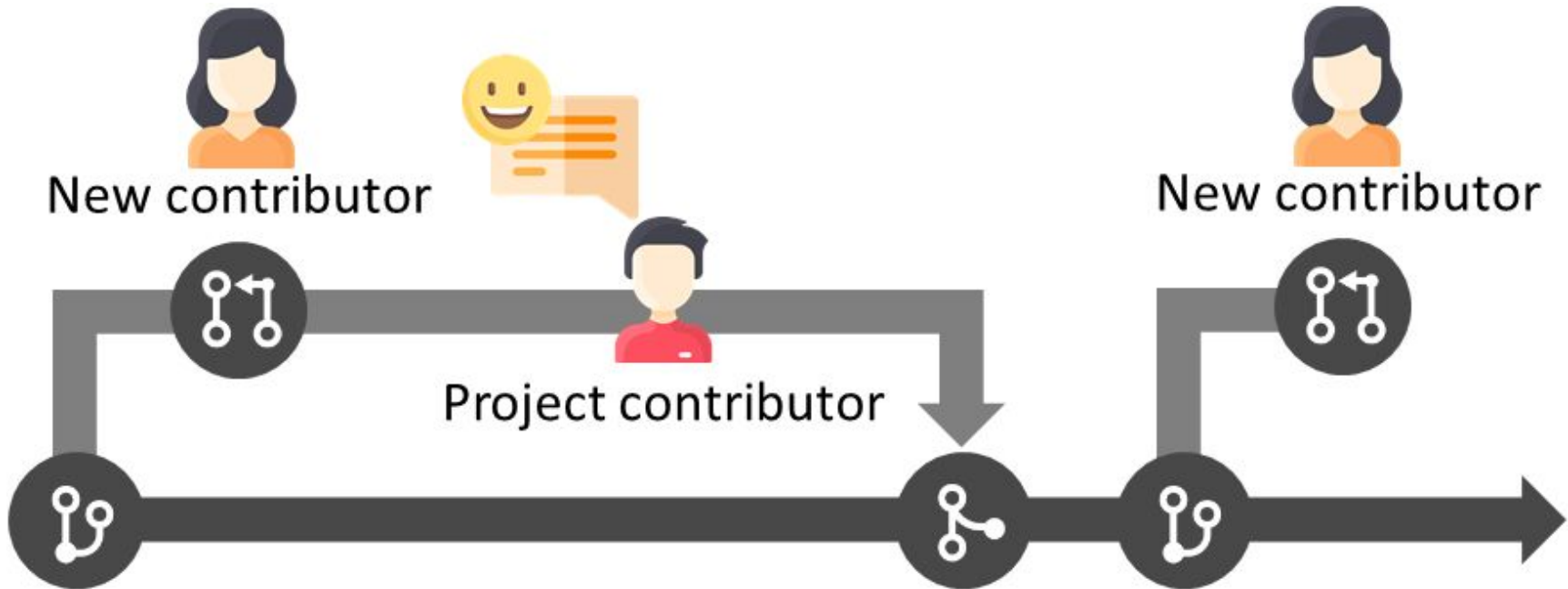
Social barrier is one of the critical barrier for new contributors



New contributors who socialized with welcome and assistance messages and constructive criticism tend to encourage future contributions



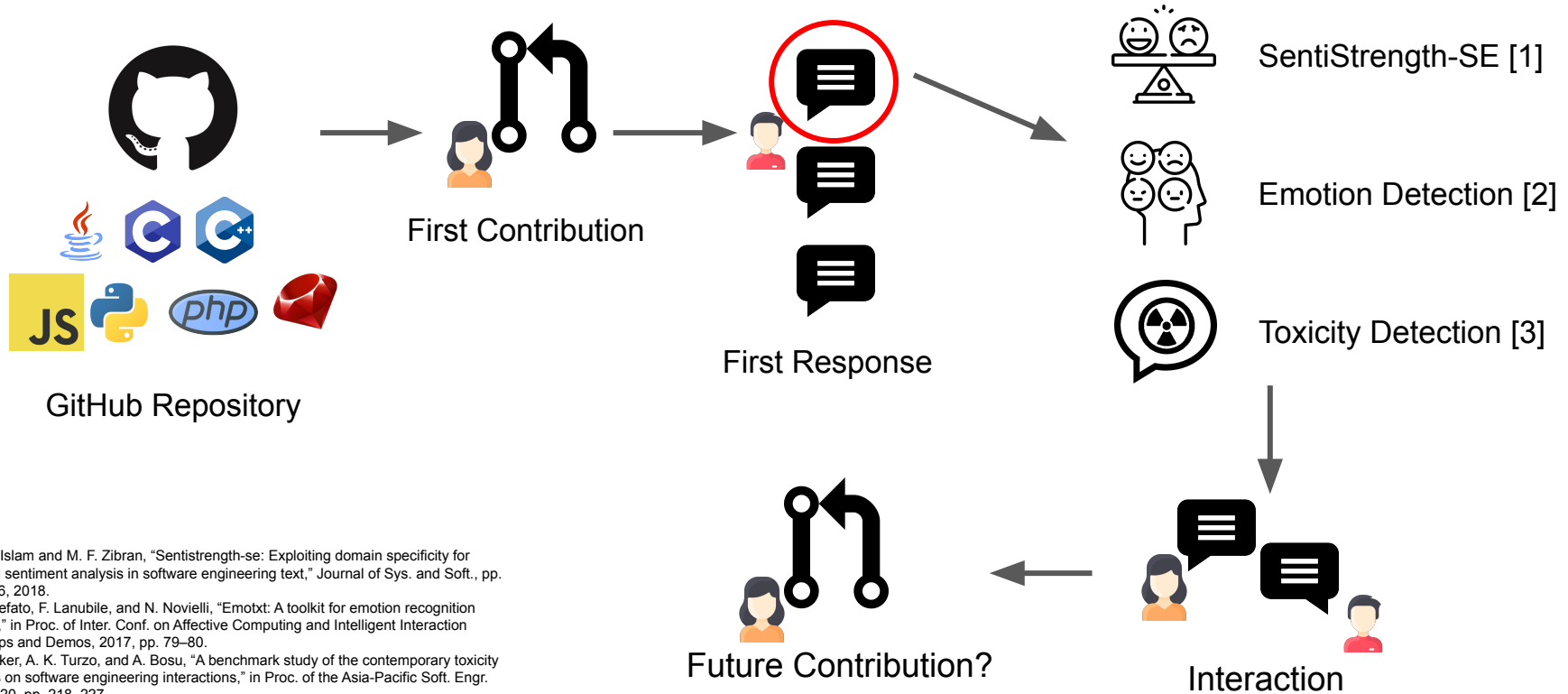
New contributors who socialized with welcome and assistance messages and constructive criticism tend to encourage future contributions

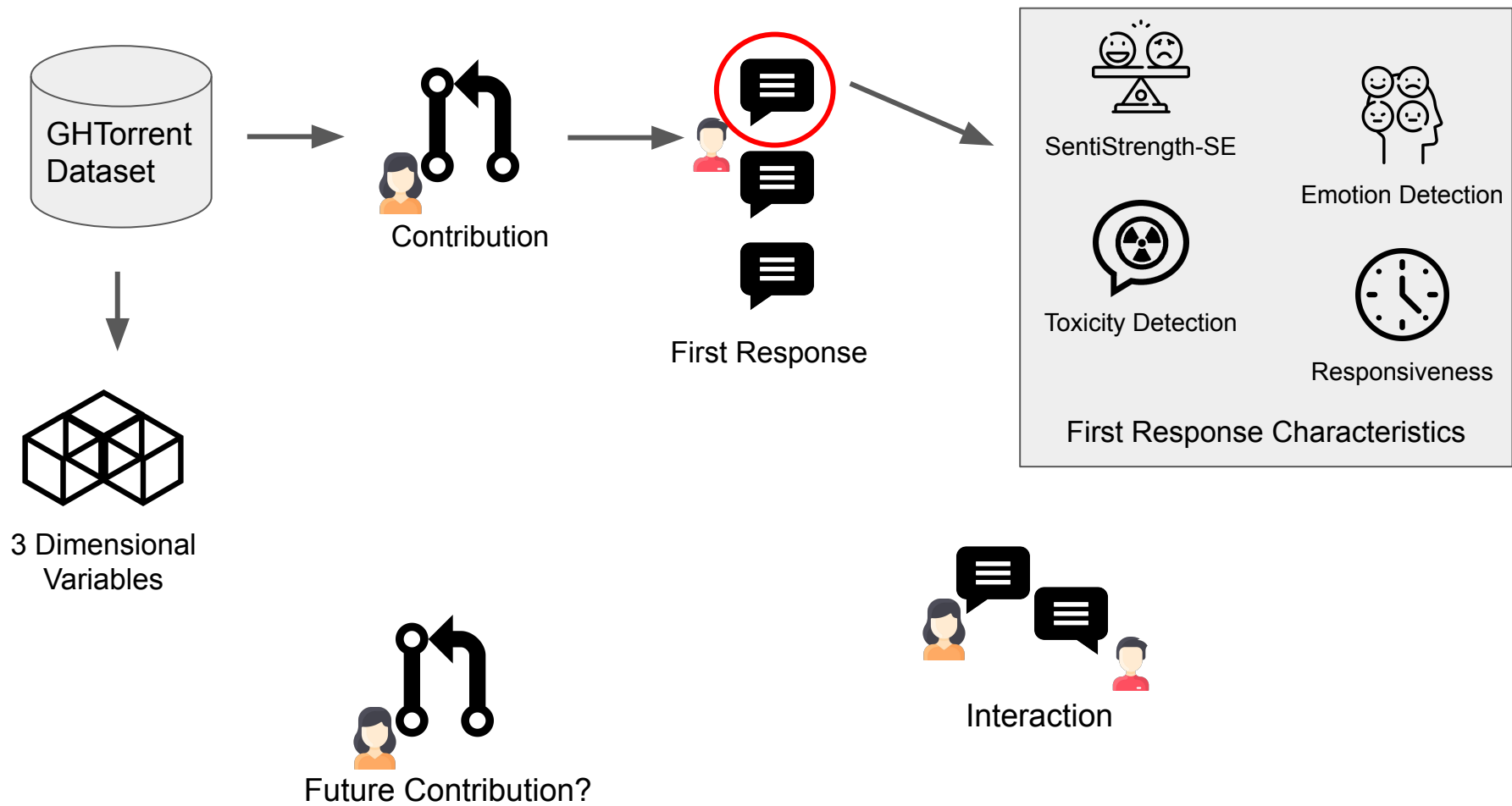


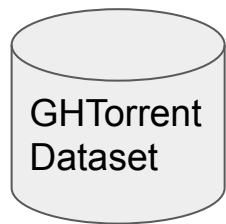
Preliminary Analysis

- Collect 11,127 projects from over 1.3 million npm projects.
- Sample top 20 projects with most contributors.
- From 43,398 pull requests, we observed that 12,003 (27.66%) are from first contribution
- 8,534 (71.10%) receive responses.

The Study Plan for Our Registered Report

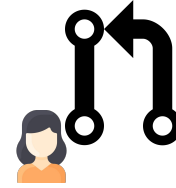




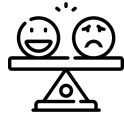




GitHub Repository



First Contribution



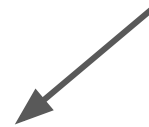
SentiStrength-SE



Emotion Detection

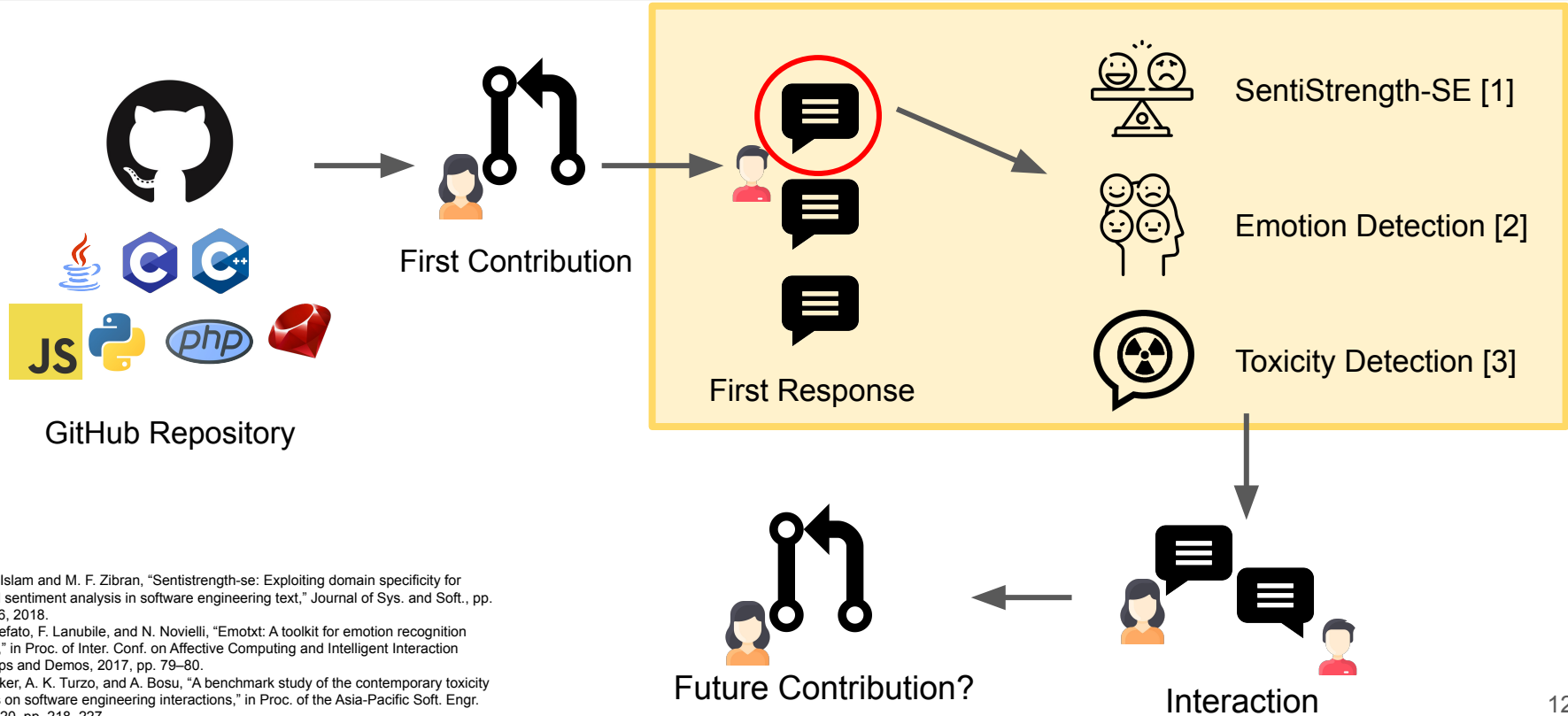


Toxicity Detection



First Response

RQ1 - First Response Characteristic

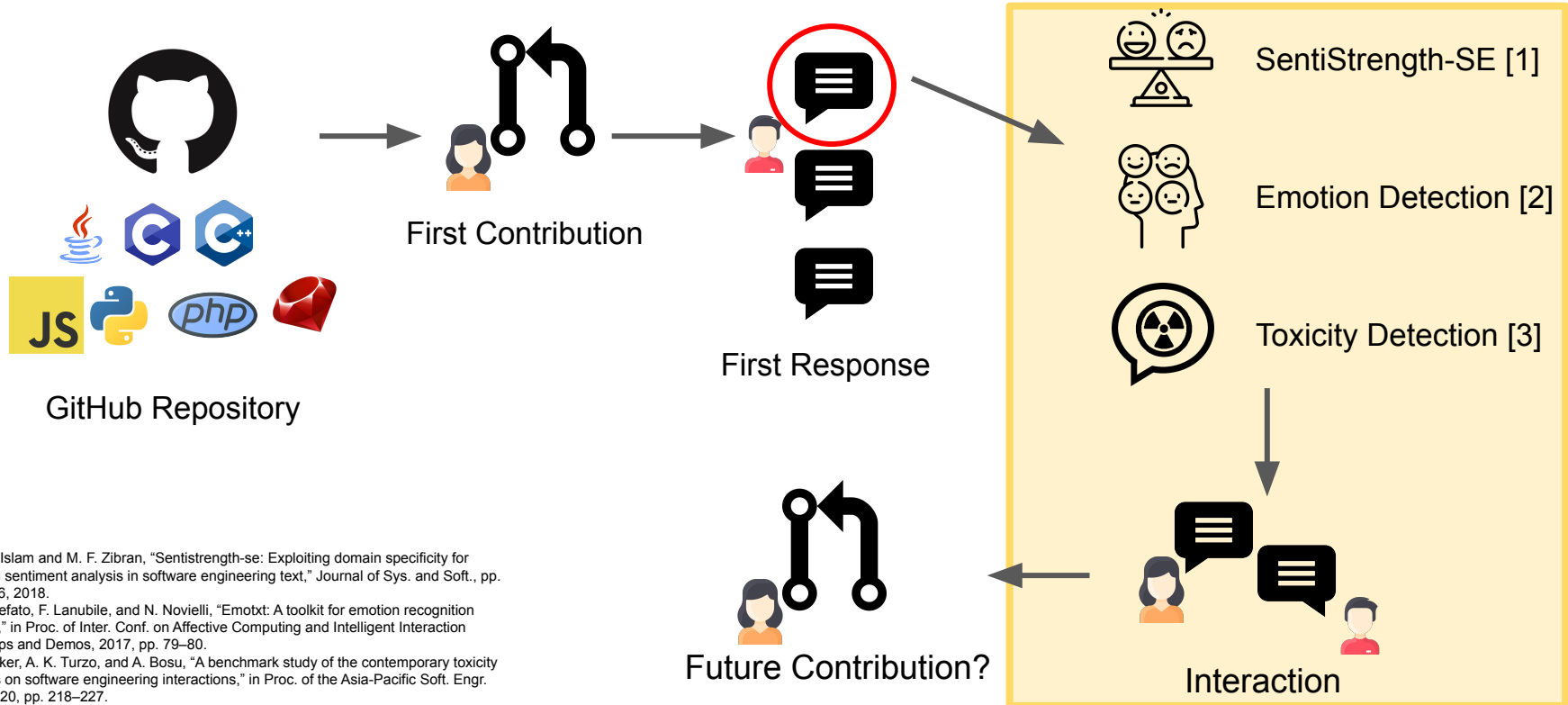


[1] M. R. Islam and M. F. Zibran, "Sentistrength-se: Exploiting domain specificity for improved sentiment analysis in software engineering text," *Journal of Sys. and Soft.*, pp. 125 – 146, 2018.

[2] F. Calefato, F. Lanubile, and N. Novielli, "Emotxt: A toolkit for emotion recognition from text," in *Proc. of Inter. Conf. on Affective Computing and Intelligent Interaction Workshops and Demos*, 2017, pp. 79–80.

[3] J. Sarker, A. K. Turzo, and A. Bosu, "A benchmark study of the contemporary toxicity detectors on software engineering interactions," in *Proc. of the Asia-Pacific Soft. Engr. Conf.*, 2020, pp. 218–227.

RQ2 - Relationship between Positive First Response and Future Interaction

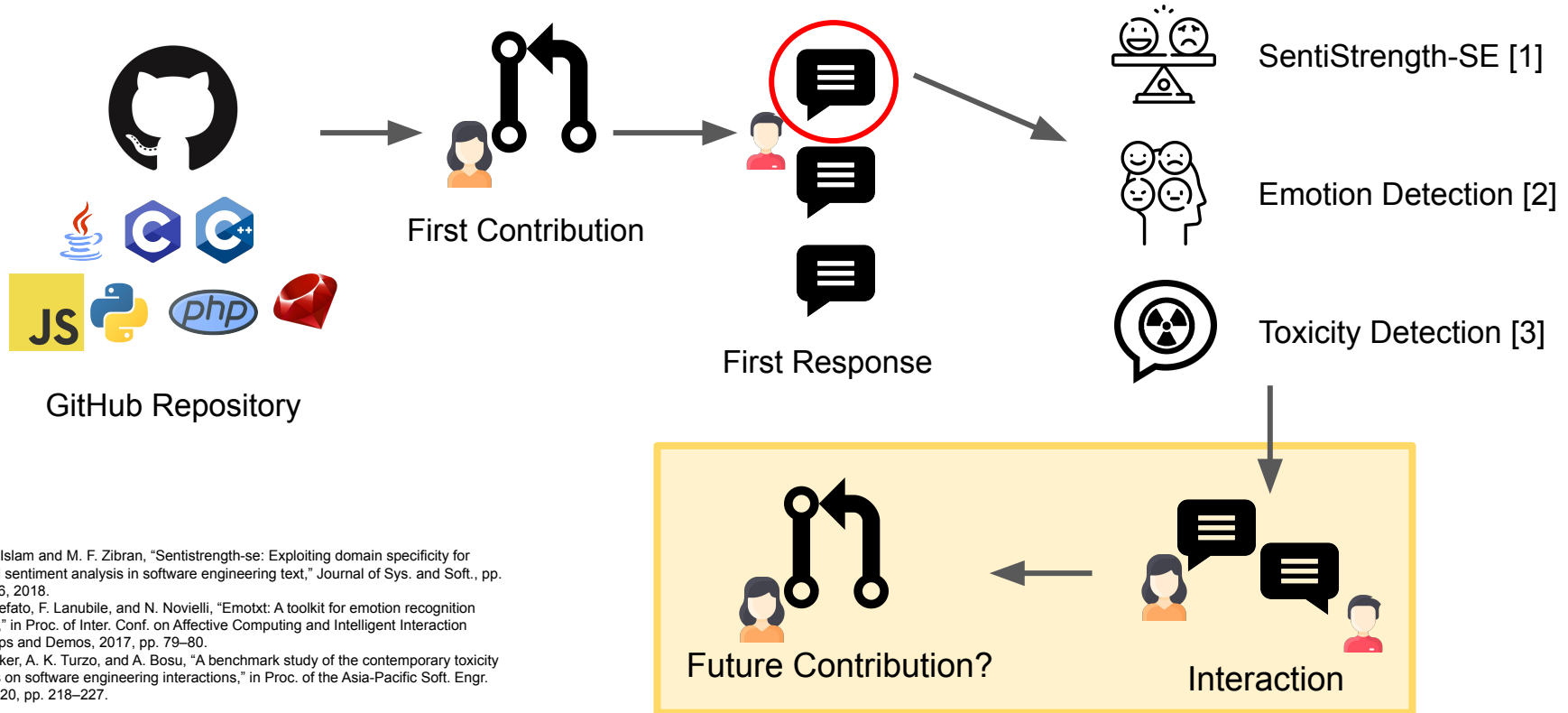


[1] M. R. Islam and M. F. Zibran, "Sentistrength-se: Exploiting domain specificity for improved sentiment analysis in software engineering text," *Journal of Sys. and Soft.*, pp. 125 – 146, 2018.

[2] F. Calefato, F. Lanubile, and N. Novielli, "Emotxt: A toolkit for emotion recognition from text," in *Proc. of Inter. Conf. on Affective Computing and Intelligent Interaction Workshops and Demos*, 2017, pp. 79–80.

[3] J. Sarker, A. K. Turzo, and A. Bosu, "A benchmark study of the contemporary toxicity detectors on software engineering interactions," in *Proc. of the Asia-Pacific Soft. Engr. Conf.*, 2020, pp. 218–227.

RQ3 - Relationship between Interaction and Future Contribution

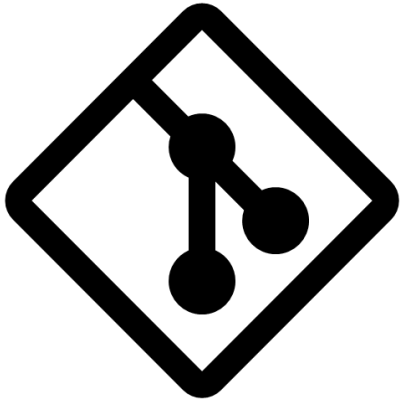


[1] M. R. Islam and M. F. Zibran, "Sentistrength-se: Exploiting domain specificity for improved sentiment analysis in software engineering text," *Journal of Sys. and Soft.*, pp. 125 – 146, 2018.

[2] F. Calefato, F. Lanubile, and N. Novielli, "Emotxt: A toolkit for emotion recognition from text," in *Proc. of Inter. Conf. on Affective Computing and Intelligent Interaction Workshops and Demos*, 2017, pp. 79–80.

[3] J. Sarker, A. K. Turzo, and A. Bosu, "A benchmark study of the contemporary toxicity detectors on software engineering interactions," in *Proc. of the Asia-Pacific Soft. Engr. Conf.*, 2020, pp. 218–227.

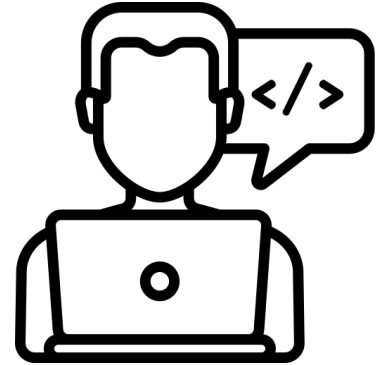
Implication



OSS Project



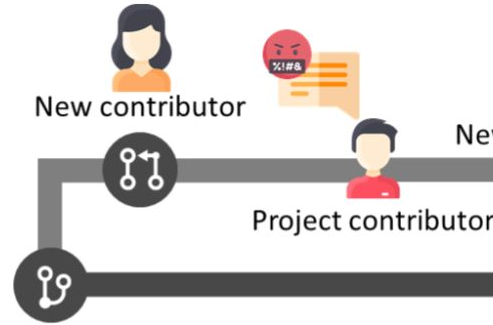
Researcher



OSS Contributor

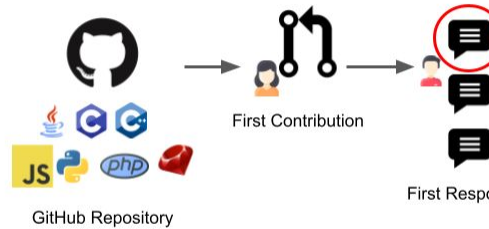
Social barrier is one of the critical barrier for new contributors

New contributors who socialized with welcome and assistance messages and constructive criticism tend to encourage future contributions

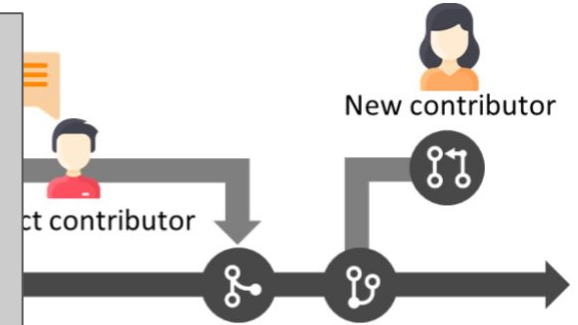


I. Steinmacher, I. S. Wiese, T. Conte, M. A. Gerosa, and D. Redmiles, "The hard life of open source software project newcomers," in Proc. of the Inter. Workshop on Cooperative and Human Aspects of Soft. Engr., 2014, p. 72–76.

The Study Plan for Our F



OSS Project



opportunity in oss community," in Proc.

6

Implication



Interaction

8

13

[1] M. R. Islam and M. F. Zibran, "Sentistrength-se: Exploiting domain specificity for improved sentiment analysis in software engineering text," Journal of Sys. and Soft., pp. 125 – 146, 2016.
 [2] F. Calefato, F. Lanubile, and N. Novelli, "Emotkit: A toolkit for emotion recognition from text," in Proc. of Inter. Conf. on Affective Computing and Intelligent Interaction Workshops and Demos, 2017, pp. 19–30.
 [3] J. Sarker, A. K. Turzo, and A. Boku, "A benchmark study of the contemporary toxicity detectors on software engineering interactions," in Proc. of the Asia-Pacific Soft. Engr. Conf., 2020, pp. 218–227.