SDEval – A Benchmarking Toolkit for Computer Algebra

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1 Abstract

Since more than a decade, the computer algebra community collects interesting examples for certain algorithmic problems in several databases ([Gräbe, 2009, Gräbe et al., 2013, Paffenholz, 2015]). These examples appeared either in the literature, or were taken from practical applications.

A fair and reproducible comparison of different computer algebra systems solving these problems on given inputs is – unfortunately – not yet common practice. With SDEval [Heinle and Levandovskyy, 2015], we aim at changing this. SDEval provides tools to translate examples from Symbolic Data into executable code for different computer algebra systems, and brings mechanisms to run and monitor their computations. Furthermore, it makes it easy for other researchers to run these computations themselves and verify them.

SDEval is designed to be flexible enough and easy to extend to fit the needs of the various distinct areas of computer algebra. We intend to present the main principles of SDEval on our poster, as well its applicability across different communities. We also show an overview of different use-cases of the tools in SDEval.

2 Resources

SDEval is free software and is part of the Symbolic-Data distribution. One can obtain it from

https://github.com/symbolicdata/symbolicdata

The latest developments can be found in this fork:

https://github.com/ioah86/symbolicdata

General information on the Symbolic Data project and SDEval, as well as the latest developments are stated on the following website:

http://www.symbolicdata.org

There is also a video tutorial on how to use SDEval. One can find it on

https://www.youtube.com/watch?v=CctmrfisZso

References

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