


REST: Integrating Term Rewriting with Program Verification (Artifact)

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— Abstract —

This artifact contains code for REST, a novel term rewriting technique for theorem proving that uses online termination checking and can be integrated with existing program verifiers. The artifact includes the REST library as well as a version of Liquid Haskell extended with REST. In addition, it

includes the scripts that were used to generate the tables in the paper’s evaluation section. Also included is a docker image containing a development environment for REST (and the Liquid Haskell extension).

2012 ACM Subject Classification Theory of computation → Program verification

Keywords and phrases term rewriting, program verification, theorem proving

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Evaluation Policy The artifact has been evaluated as described in the ECOOP 2022 Call for Artifacts and the ACM Artifact Review and Badging Policy.

1 Scope

This artifact includes the REST library, the REST extension to Liquid Haskell, and code for test cases appearing in tables 1 and 2. In addition, it also contains a script to reproduce the example REST execution of Figure 4.

* This work was partly done while the author was at MPI-SWS.



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2 Content

The artifact package includes source code for REST and the Liquid Haskell extension. It also contains the scripts used for the evaluation section of the paper.

To assist in reproduction, the artifact includes a Docker image with:

- Compiled versions of our REST implementation and extension to Liquid Haskell
- The necessary tools to develop and run REST and our extension to Liquid Haskell
- Executable versions of the other tools used in our comparison for Table 1

3 Getting the artifact

The artifact endorsed by the Artifact Evaluation Committee is available free of charge on the Dagstuhl Research Online Publication Server (DROPS). In addition, the latest version of REST is available on Github (<https://github.com/zgrannan/rest>) and on Hackage (<https://hackage.haskell.org/package/rest-rewrite>).

4 Tested platforms

This artifact has been tested on MacOS and Linux. However, we expect that the Docker image should be compatible with any operating system that supports Docker. If you wish to use the Docker image, we suggest that you have at least 50GB of hard drive space available.

5 License

The artifact is available under the BSD 3-Clause License

6 MD5 sum of the artifact

4c74c72ab1072f56789e9a9f112abac2

7 Size of the artifact

4.0 GiB

A Notes

Instructions for using the artifact are described in the `README.md` file of the artifact archive.

If you are simply interested in using REST in your project, we recommend that you use the latest version from Github (<https://github.com/zgrannan/rest>) or Hackage (<https://hackage.haskell.org/package/rest-rewrite>). Additionally, the REST extension of Liquid Haskell has now been merged into Liquid Haskell itself; that version supercedes the version in this artifact.