

Replication files for ‘Simple and Honest Confidence Intervals in Nonparametric Regression’

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These supplemental materials contain Appendix F with additional simulation results, and the file `simple_cis_replication-2019-08-29.tar.gz`, which contains the R scripts and packages required to replicate all numerical results in the paper.

Instructions for replicating results in the paper

- The file `simple_cis_replication-2019-08-29.tar.gz` contains the R scripts and packages required to replicate all numerical results in the paper. The packages are managed by the R package `packrat` to ensure the same version of the packages are used in the replication.
- To install the packages, install the `packrat` package (using `install.packages("packrat")`), and then run, from the current directory,

```
packrat::unbundle("simple_cis_replication-2019-08-29.tar.gz", ".")
```

This will generate a directory called `simple_cis_replication`, and install all necessary libraries in the directory, inside the `packrat/` subdirectory. The subdirectory `R/` contains R functions used in the replication, and the directory `output/` contains the replication output.

- Once the libraries are installed, the results can be replicated as follows:
 1. The script `theory.R` replicates Replicate results in Sections 2–4 and Appendix D. To replicate these results, including the figures, run

```
Rscript theory.R TRUE
```

from the `simple_cis_replication` directory. The figures are generated as LaTeX/TikZ figures, which requires LaTeX to be installed. To only replicate the tables, instead run `Rscript theory.R FALSE`. The figures are stored in the directory `output/figures`, and the tables are stored in `output/tables/theory.txt`.
 2. The script `empirical_application.R` replicates the results in Section 6. To replicate the results, including the figures, run

```
Rscript empirical_application.R TRUE
```

from the `simple_cis_replication` directory. The figures are generated as LaTeX/TikZ figures, which requires LaTeX to be installed. To only replicate the tables, instead run `Rscript empirical_application.R FALSE`. The figures are stored in the directory `output/figures`, and the tables in `output/tables/empirical_application.txt`.
 3. The script `simulation.R` replicates the simulation results in Section 5 and Appendix F. To replicate the results, including the figures, run

```
Rscript simulation.R 50000 cores TRUE
```

Here `cores` is the number of cores for parallel computation, and 50000 is the number of simulation draws. To replicate the tables only, change the last argument to `FALSE`. Since the simulation takes a while to run, the simulation results are precomputed in `output/data/LPSimResults-50000-12.RData`. Remove this file to compute the results from scratch. The script will re-create it, output the tables in `output/tables/LPSimResults-50000-cores.txt`, and output Figure 4 in the directory `figures/`