Author Contributions Checklist Form

This form documents the artifacts associated with the article (i.e., the data and code supporting the computational findings) and describes how to reproduce the findings.

# Part 1: Data

This paper **does not** involve analysis of external data (i.e., no data are used or the only data are generated by the authors via simulation in their code).

I certify that the author(s) of the manuscript have legitimate access to and permission to use the data used in this manuscript.

## Abstract

We use the following datasets:  
  
1) Nine regression datasets from the UCI repository (Abalone, Ailerons, Airfoil, Banking, Boston housing, California housing, Delta ailerons, Kinematics, Puma)

2) Standard ML datasets: CIFAR-10, ImageNet, and MNIST datasets

3) COVID-19 data from the DELPHI group at Carnegie Mellon University

4) Three datasets from the UCI repository: real-estate data, weather history data, and wine quality data.

## Availability

Data **are** publicly available

Data **cannot be made** publicly available

If the data are publicly available, see the *Publicly available data* section. Otherwise, see the *Non-publicly available dat*a section, below.

### Publicly available data

Data are available online at: all data locations are included in a separate file named "data\_location\_dictionary.pdf"

Data are available as part of the paper’s supplementary material.

Data are publicly available by request, following the process described here:

Data are or will be made available through some other mechanism, described here:

### Non-publicly available data

Discussion of lack of publicly available data:

## Description

### File format(s)

CSV or other plain text:

Software-specific binary format (.Rda, Python pickle, etc.):

Standardized binary format (e.g., netCDF, HDF5, etc.):

Other (described here):

### Data dictionary

Provided by the authors in the following file(s): data\_location\_dictionary.pdf

Data file(s) is (are) self-describiing (e.g., netCDF files)

Available at the following URL:

For all UCI repositor datasets: http://archive.ics.uci.edu/  
COVID-19: <https://delphi.cmu.edu/covidcast/export/>.

CIFAR-10: <https://www.cs.toronto.edu/~kriz/cifar.html>.

MNIST: <http://yann.lecun.com/exdb/mnist/>

ImageNet: <https://image-net.org/>

### Additional information (optional)

# Part 2: Code

## Abstract

We have included the code for all the experiments conducted for the paper. Files are named according to rthe fugure numbers from the paper for which this code was used to generate results. We have divided the code into four folders: first folder produces figures 1 and 5, second folder produces figures 2, 3, and 4, the third folder produces figures 6, 7, 8, and 9 and the final folder produces figure 10. More details are included in the readme file submitted via the code repository.

## Description

### Code format(s)

Script files

R  Python  Matlab

Other:

Package

R  Python  MATLAB toolbox

Other:

Reproducible report

R Markdown  Jupyter notebook

Other:

Shell script

Other (described here):

### **Supporting software requirements**

Version of primary software used

R version 4.2.2

Python version: 3.10.9

Libraries and dependencies used by the code

All the code are compatible with the latest version of all the packages.

### Supporting system/hardware requirements (optional)

### Parallelization used

No parallel code used

Multi-core parallelization on a single machine/node

Number of cores used:

Multi-machine/multi-node parallelization

Number of nodes and cores used:

### License

MIT License (default)

BSD

GPL v3.0

Creative Commons

Other (described here):

### Additional information (optional)

# Part 3: Reproducibility workflow

## Scope

The provided workflow reproduces:

Any numbers provided in text in the paper

The computational method(s) presented in the paper (i.e., code is provided that implements the method(s))

All tables and figures in the paper

Selected tables and figures in the paper, as explained and justified here:

## Workflow details

### Location

The workflow is available:

As part of the paper’s supplementary material

In this Git repository:

Other:

### Format(s)

Single master code file

Wrapper (shell) script(s)

Self-contained R Markdown file, Jupyter notebook, or other literate programming approach

Text file (e.g., a readme-style file) that documents workflow

Makefile

Other (more detail in 'Instructions' below)

### Instructions

We have included readme files with the git repository that explains the steps to reproduce the reults in the main paper.

Expected run-time

Approximate time needed to reproduce the analyses on a standard desktop machine:

<1 minute

1-10 minutes

10-60 minutes

1-8 hours

>8 hours

Not feasible to run on a desktop machine, as described here:

### Additional documentation (optional)

# Notes (optional)