

## **JASA ACS Reproducibility Initiative - Author Contributions Checklist Form**

The purpose of the Author Contributions Checklist (ACC) Form is to document the code and data supporting a manuscript, and describe how to reproduce its main results.

As of Sept. 1, 2016, the ACC Form must be included with all new submissions to JASA ACS.

This document is the initial version of the template that will be provided to authors. The JASA Associate Editors for Reproducibility will update this document with more detailed instructions and information about best practices for many of the listed requirements over time.

### **Data**

#### **Abstract (Mandatory)**

The raw data for this study is data about Facebook users sharing links (URLs) on Facebook, some summaries of their other behaviors, and functions of those quantities combined with the social network of friendships. Intermediate processing of this data results in summary statistics that describe the estimates of peer effects produced by each of a number of analysis methods.

#### **Availability (Mandatory)**

The raw data cannot be made publicly available, as it contains private and personally identifiable information and it is of substantial interest to many bad actors. It is also very large. We are making available data that are aggregate statistics sufficient to reproduce the main results; this will be available publicly.

#### **Description (Mandatory if data available)**

The provided data consists of both (a) aggregates that average over all domain names, as in the main results in the paper, (b) aggregates that break out results by the prior popularity of the domain, and (c) aggregates for a single domain that break out the results by percentiles of propensity scores, as in Figure 1 of the paper.

#### **Optional Information (complete as necessary)**

### **Code**

#### **Abstract (Mandatory)**

In the broadest sense, the full code for this study includes all of the software running on Facebook that implemented the randomized experiment, recorded the relevant behaviors, processed them for the intermediate analysis, etc. We focus on providing reproducibility for the analyses in the paper for which we can provide the aggregated data as a starting point.

#### **Description (Mandatory)**

Our replication archive consists of R code for processing of the results of each model and producing the figures in the paper.

### Optional Information (complete as necessary)

Requirements for the code to be provided are modest. We have run this on a machine with MacOS 10.4 with R 3.6.2. The following R configuration and packages were used:

```
R version 3.6.2 (2019-12-12)
Platform: x86_64-apple-darwin18.7.0 (64-bit)
Running under: macOS Mojave 10.14.6

Matrix products: default
BLAS/LAPACK: /usr/local/Cellar/openblas/0.3.7/lib/libopenblas-r0.3.7.dylib

locale:
[1] en_US.UTF-8/en_US.UTF-8/en_US.UTF-8/C/en_US.UTF-8/en_US.UTF-8

attached base packages:
[1] parallel    splines     stats       graphics    grDevices   utils       datasets
[8] methods     base

other attached packages:
[1] latticeExtra_0.6-28      RColorBrewer_1.1-2      MASS_7.3-51.4
[4] directlabels_2020.1.31  reshape2_1.4.3          Hmisc_4.3-1
[7] Formula_1.2-3           survival_3.1-8          lattice_0.20-38
[10] digest_0.6.24           ggplot2_3.2.1           doMC_1.3.5
[13] iterators_1.0.12        randomizr_0.20.0        glmnet_3.0-2
[16] Matrix_1.2-18           tidyr_1.0.0             dplyr_0.8.3
[19] plyr_1.8.4              foreach_1.4.8           igraph_1.2.4.1

loaded via a namespace (and not attached):
[1] shape_1.4.4             tidyselect_0.2.5        xfun_0.12               purrr_0.3.3
[5] colorspace_1.4-1       vctrs_0.2.1            htmltools_0.4.0         base64enc_0.1-3
[9] rlang_0.4.4            pillar_1.4.3           foreign_0.8-72          glue_1.3.1
[13] withr_2.1.2            lifecycle_0.1.0        stringr_1.4.0           munsell_0.5.0
[17] gtable_0.3.0           htmlwidgets_1.3        codetools_0.2-16       knitr_1.28
[21] htmlTable_1.13.1       Rcpp_1.0.3             acepack_1.4.1           scales_1.0.0
[25] backports_1.1.4        checkmate_1.9.1        gridExtra_2.3           stringi_1.4.6
[29] grid_3.6.2            quadprog_1.5-8         tools_3.6.2            magrittr_1.5
[33] lazyeval_0.2.2        tibble_2.1.3          cluster_2.1.0          crayon_1.3.4
[37] pkgconfig_2.0.3        zeallot_0.1.0         data.table_1.12.4       assertthat_0.2.1
[41] rstudioapi_0.10       R6_2.4.1              rpart_4.1-15           nnet_7.3-12
[45] compiler_3.6.2
```

## Instructions for Use

### Reproducibility (Mandatory)

The provided code produces all tables and figures from the paper and Table S1, Figures S5-7 and S9, S10, and S13 in the Supplementary Materials.

A Makefile runs all scripts, as described in the README.