README

The primary code to conduct simulation studies is in the “main\_simulation\_code.R” file.

In this file (main\_simulation\_code.R), we may use the following three files (.R) to generate PRS data, unknown confounders, the outcome of interests, and run the PRS-outcome association analysis.

[generate\_simulation\_components.R file]: The “generate\_simulation\_components.R” is a function to generate observed PRS (both homogeneous weighting and heterogeneous weighting PRS) and the unknown confounders we considered in the simulation studies (includes: conf-PRS1, conf-PRS2, single variant, two variants, and conf-pc\*).

[generate\_simulation\_outcomes.R file]: The “generate\_simulation\_outcomes.R” is a function to generate outcomes by the data-generating models we considered in simulation studies.

[estimate\_prs\_associations.R file]: The “estimate\_prs\_associations.R” is a function to estimate the PRS-outcome association by the association models we considered in the simulation studies.