Description

We provide some codes for the work:

Functional Bayesian Additive Regression Trees with Shape Constraints

In general, our files can be divided into **two parts**:

- An **R package** `FBART` package written in `C++` and `R`.
- Using this package, an RMarkdown file is provided to demonstrate the proposed FBART and S-FBART.

The R Package FBART

We provide an **R package** in file `FBART_1.0.tar.gz`, for the estimation framework proposed in the paper. This package is mainly written in `C++`, with the help of `RcppArmadillo`.

To install this package, make sure the R packages `Rcpp` and `TruncatedNormal` are available. Also, for macOS, you need a FORTRAN compiler to compile R packages from sources (see this guidance).

This package will be installed in the first code chunk in `illustrating_example.Rmd`. You can also install it in command line:

```
R CMD INSTALL FBART_1.0.tar.gz
```

R Files for Illustration

The RMarkdown file, `illustrating_example.Rmd`, gives an illustrating example to demonstrate the use of our methods.

- In this Rmd file, running the model fitting chunk can take a few minutes.
- The running results are stored in folder `./Data`, and the generated figures are stored in folder `./Figures`.
- The generated PDF file `illustrating_example.pdf` is provided.

The R file, `functions.R`, provides an `R` function that summarizes the posterior curves.