Package: RegEnRF (via r-universe)

May 25, 2026

Type Package

Title Regression-Enhanced Random Forests

Version 1.0.0.9000

Description A novel generalized Random Forest method, that can improve on RFs by borrowing the strength of penalized parametric regression. Based on Zhang et al. (2019) <doi:10.48550/arXiv.1904.10416>.

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BugReports https://github.com/umbe1987/regenrf/issues

Imports glmnet, randomForest

Suggests testthat (>= 3.0.0)

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Encoding UTF-8

LazyData true

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URL https://github.com/umbe1987/regenrf

Repository https://umbe1987.r-universe.dev

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Contents

`predict.RegEnRF` *Prediction of test data using Regression-Enhanced Random Forests.*

Description

Prediction of test data using Regression-Enhanced Random Forests.

Usage

```
## S3 method for class 'RegEnRF'
predict(object, newx, ...)
```

Arguments

`object`	an object of class "RegEnRF", as that created by the function RegEnRF
`newx`	matrix of new values for x at which predictions are to be made function will abort.
`...`	other arguments passed to glmnet::predict.glmnet and randomForest:::predict.randomForest.

Value

A vector of predicted values.

Examples

```
set.seed(111)
x <- matrix(rnorm(100 * 20), 100, 20)
y <- rnorm(100)
mod <- RegEnRF(x, y, lambda = 0.1)
predict(mod, newx = x)
```

`RegEnRF` *Regression-Enhanced Random Forests*

Description

`RegEnRF()` implements Regression-Enhanced Random Forests algorithm (based on Zhang et al., 2019 paper) for regression.

Usage

```
RegEnRF(x, y, lambda, ...)
```

Arguments

`x`	A numeric matrix of predictors. Requirement: nvars >1; in other words, x should have 2 or more columns. This is a constraint of `glmnet::glmnet()`.
`y`	A numeric response vector.
`lambda`	See 'lambda' argument in `glmnet::glmnet()`.
`...`	other arguments passed to `glmnet::glmnet()` and `randomForest::randomForest()`.

Details

This function is based on the packages `randomForest::randomForest` and `glmnet::glmnet`.

Value

An object with S3 class "RegEnRF"

Author(s)

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References

Zhang, H., Nettleton, D., & Zhu, Z. (2019). Regression-enhanced random forests. arXiv preprint doi:10.48550/arXiv.1904.10416.

Examples

```
set.seed(111)
data(co2)
x <- matrix(c(time(co2), cycle(co2)), ncol = 2)
y <- as.numeric(co2)
mod <- RegEnRF(x, y, lambda = 0.1)
freq <- frequency(co2)
startt <- tsp(co2)[2] + 1 / freq
xnew.t <- seq(startt, by = 1 / freq, length.out = freq * 3)
xnew <- matrix(c(xnew.t, cycle(tail(co2, freq * 3))), ncol = 2)
pred <- predict(mod, xnew)
pred.ts <- ts(pred, start = startt, frequency = freq)
plot(ts.union(co2, pred.ts), plot.type = "single", col = c("black", "red"))
```

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