

Package ‘SCORNET’

January 4, 2021

Title Semi-Supervised Calibration of Risk with Noisy Event Times

Version 0.1.1

Description A consistent, semi-supervised, non-parametric survival curve estimator optimized for efficient use of Electronic Health Record (EHR) data with a limited number of current status labels. See van der Laan and Robins (1997) <doi:10.2307/2670119>.

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Encoding UTF-8

RoxygenNote 7.1.1

Imports Matrix, survival, pracma, foreach, doParallel, parallel, Rcpp

LinkingTo Rcpp, RcppArmadillo

Suggests knitr, rmarkdown

VignetteBuilder knitr

LazyData true

URL <https://github.com/celehs/SCORNET>

BugReports <https://github.com/celehs/SCORNET/issues>

NeedsCompilation yes

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SCORNET-package	<i>SCORNET: A novel non-parametric survival curve estimator for the Electronic Health Record</i>
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Description

Semi-Supervised Calibration of Risk with Noisy Event Times (SCORNET) is a consistent, non-parametric survival curve estimator that boosts efficiency over existing non-parametric estimators by (1) utilizing unlabeled patients in a semi-supervised fashion, and (2) leveraging information-dense engineered EHR features to maximize unlabeled set imputation precision See Ahuja et al. (2020) BioArxiv for details

scornet	<i>SCORNET Estimator</i>
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Description

SCORNET Estimator

Usage

```
scornet(
  Delta,
  C,
  t0.all,
  C.UL = NULL,
  filter = NULL,
  filter.UL = NULL,
  Z0 = NULL,
  Z0.UL = NULL,
  Zehr = NULL,
  Zehr.UL = NULL,
  K = Knorm,
  b = NULL,
  bexp = -1/4,
  fc = NULL,
  nCores = 1
)
```

Arguments

Delta	Labeled set current status labels (I(T<C))
C	Labeled set censoring times
t0.all	Times at which to estimate survival

C.UL	Unlabeled set censoring times
filter	Labeled set binary filter indicators
filter.UL	Unlabeled set filter indicators
Z0	Labeled set baseline feature matrix
Z0.UL	Unlabeled set baseline feature matrix
Zehr	Labeled set EHR-derived feature matrix
Zehr.UL	Unlabeled set EHR-derived feature matrix
K	Kernel function (defaults to standard normal)
b	bandwidth (optional)
bexp	bandwidth exponent (must be between -1/5 and -1/3, defaults to -1/4)
fc	$N^{1/4}$ -consistent pdf estimator of $CIZ0$ (defaults to Kernel-Smoothed Cox/Breslow estimator)
nCores	Number of cores to use for parallelization (defaults to 1)

Value

S_hat: Survival function estimates at times t0.all; StdErrs: Asymptotically consistent standard error estimates corresponding to S_hat

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