selective_inference package

Release v0.1.3

Daiki Miwa

Oct 05, 2021

CONTENTS:

Contents:

CHAPTER

ONE

SELECTIVE_INFERENCE

1.1 selective_inference package

class selective_inference.si.**SI_result**(*A: list*, *k: float*, *p_values: list*, *CIs: list*)

this class have result of selective inference. each selective inference function return this class.

A

selected feature

Type List[int]

k

hyperparameter of feature selection algorithm

Type float

p_values

p-values of selected features

Type List[float]

CIs

confidence intervals of selected features

Type List[portion.interval.Interval]

selective_inference.sfs_si.**parametric_sfs_cv_si**(*X: numpy.ndarray*, *y: numpy.ndarray*, *k_candidates: List[float]*, *k_folds: int*, *sigma: int = 1*, *alpha: float = 0.05*) → *selective_inference.si.SI_result*

parametic selective inference for stepwise feature selection with cross validation

Parameters

- **X** (*np.ndarray*) – design matrix(n x p)
- **y** (*np.ndarray*) – obejective variable(n x 1)
- **k_candidates** (*list[float]*) – list of k candidates
- **k_folds** (*int*) – fold number in cross validation
- **sigma** (*int, optional*) – variance for selective inference. Defaults to 1.
- **alpha** (*float, optional*) – significance level. Defaults to 0.05.

Returns please reffer to document of SI_result

Return type *si.SI_result*

selective_inference.sfs_si.**parametric_sfs_si**(*X: numpy.ndarray*, *y: numpy.ndarray*, *k: int*, *sigma: int = 1*, *alpha: float = 0.05*) → *selective_inference.si.SI_result*

parametric selective inference for stepwise feature selection

Parameters

- **X** (*np.ndarray*) – design matrix(n x p)
- **y** (*np.ndarray*) – obejective variable(n x 1)
- **k** (*int*) – number of feature to be selected(hyperparameter)
- **sigma** (*int, optional*) – variance for selective inference. Defaults to 1.
- **alpha** (*float, optional*) – significance level. Defaults to 0.05.

Returns reffer to document of SI_result

Return type *si.SI_result*

selective_inference.lasso_si.**parametric_lasso_cv_si**(*X*, *y*, *k_candidates*, *k_folds*)

parametic selective inference for lasso with cross validation

Parameters

- **X** (*np.ndarray*) – design matrix(n x p)
- **y** (*np.ndarray*) – obejective variable(n x 1)
- **k_candidates** (*List[float]*) – list of k candidates
- **k_folds** (*int*) – fold number in cross validation
- **sigma** (*int, optional*) – variance for selective inference. Defaults to 1.
- **alpha** (*float, optional*) – significance level. Defaults to 0.05.

Returns please reffer to document of SI_result

Return type *si.SI_result*

selective_inference.lasso_si.**parametric_lasso_si**(*X*, *y*, *alpha*)

parametric selective inference for lasso

Parameters

- **X** (*np.ndarray*) – design matrix(n x p)
- **y** (*np.ndarray*) – obejective variable(n x 1)
- **k** (*int*) – regularization parameter (hyperparameter)
- **sigma** (*int, optional*) – variance for selective inference. Defaults to 1.
- **alpha** (*float, optional*) – significance level. Defaults to 0.05.

Returns reffer to document of SI_result

Return type *si.SI_result*

selective_inference.lars_si.**parametric_lars_cv_si**(*X*, *y*, *k_candidates*, *k_folds*)

parametic selective inference for lars with cross validation

Parameters

- **X** (*np.ndarray*) – design matrix(n x p)
- **y** (*np.ndarray*) – obejective variable(n x 1)

- **k_candidates** (*List[float]*) – list of k candidates
- **k_folds** (*int*) – fold number in cross validation
- **sigma** (*int, optional*) – variance for selective inference. Defaults to 1.
- **alpha** (*float, optional*) – significance level. Defaults to 0.05.

Returns please reffer to document of SI_result

Return type *si.SI_result*

selective_inference.lars_si.**parametric_lars_si**(*X: numpy.matrix*, *y: numpy.matrix*, *k: int*)

parametric selective inference for lars

Parameters

- **X** (*np.ndarray*) – design matrix(n x p)
- **y** (*np.ndarray*) – obejective variable(n x 1)
- **k** (*int*) – number of feature to be selected(hyperparameter)
- **sigma** (*int, optional*) – variance for selective inference. Defaults to 1.
- **alpha** (*float, optional*) – significance level. Defaults to 0.05.

Returns reffer to document of SI_result

Return type *si.SI_result*

PYTHON MODULE INDEX

S

INDEX