Package 'ordered'

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Title 'parsnip' Engines and Wrappers for Ordinal Classification Models

Version 0.1.0

Description Bindings, methods, and tuners for using ordinal classification models with the 'parsnip' and 'dials' packages. These include the regularized elastic net ordinal regression of Wurm, Hanlon, and Rathouz (2021) <doi:10.18637/jss.v099.i06> in 'ordinalNet', the ordinal classification trees of Galimberti, Soffritti, and Di Maso (2012) <doi:10.18637/jss.v047.i10> in 'rpartScore', and the latent variable ordinal forests of Hornung (2020) <doi:10.1007/s00357-018-9302-x> in 'ordinalForest'.

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Depends parsnip (>= 1.5)

Imports cli, dials (>= 1.4.3), purrr, rlang (>= 1.1.4), tibble, tidyr

Suggests dplyr, MASS, ordinalNet, VGAM, rpartScore, ordinalForest, QSARdata, spelling, testthat (>= 3.0.0)

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`ordinalForest_parameters`
Dials for `ordinalForest` *engine parameters*

Description

These parameters are auxiliary to random forest models that use the "ordinalForest" engine. They correspond to tuning parameters that would be specified using `set_engine("ordinalForest", ...)`.

Usage

```
naive_scores(values = c(FALSE, TRUE))

num_scores(range = c(100L, 2000L), trans = NULL)

num_score_perms(range = c(100L, 500L), trans = NULL)

num_score_trees(range = c(10L, 200L), trans = NULL)

num_scores_best(range = c(2L, 20L), trans = NULL)

ord_metric(values = values_ord_metric)

values_ord_metric
```

Arguments

`values`	A character string of possible values. See `values_ord_metric`.
`range`	A two-element vector holding the *defaults* for the smallest and largest possible values, respectively. If a transformation is specified, these values should be in the *transformed units*.
`trans`	A `trans` object from the `scales` package, such as `scales::transform_log10()` or `scales::transform_reciprocal()`. If not provided, the default is used which matches the units used in `range`. If no transformation, `NULL`.

Format

An object of class `character` of length 4.

Details

These functions generate parameters for `parsnip::rand_forest()` models using the `"ordinalForest"` engine. See `?ordinalForest::ordfor()` for more details on the original parameters. These parameters are engine-specific, not general to decision tree models, so are provided here rather than in `dials`.

- `naive_scores()`: Whether to construct only a "naive" ordinal forest using the scores $1, 2, 3, \ldots$ for the ordinal values; tunes `naive`.
- `num_scores()`: The number of score sets tried prior to optimization; tunes `nsets`.
- `num_score_perms()`: The number of permutations of the class width ordering to try for each score set tried (after the first); tunes `npermtrial`.
- `num_score_trees()`: The number of trees in the score set–specific forests; tunes `ntreeperdiv`.
- `num_scores_best()`: The number of top-performing score sets used to calculate the optimized score set; tunes `nbest`.
- `ord_metric()`: The performance function used to evaluate score set–specific forests; tunes `perffunction`. See also `?ordinalForest::perff`.

Value

An object of S3 parent class `param` and primary class `qual_param` or `quant_param`; see `dials::new_qual_param()` and [dials::new_quant_param().

See Also

`dials::trees()`

Examples

```
naive_scores()
num_scores()
num_score_perms()
num_score_trees()
num_scores_best()
ord_metric()
```

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rpartScore_parameters *Dials for* `rpartScore` *engine parameters*

Description

These parameters are auxiliary to decision tree models that use the "rpartScore" engine. They correspond to tuning parameters that would be specified using `set_engine("rpartScore", ...)`.

Usage

```
split_func(values = c("abs", "quad"))

prune_func(values = c("mr", "mc"))
```

Arguments

values	A character string of possible values.

Details

split_func and prune_func are dials for split and prune, respectively. See ?rpartScore::rpartScore for more details on the original parameters. These parameters are engine-specific, not general to decision tree models, so are provided here rather than in dials.

Value

An object of S3 parent class param and primary class qual_param; see dials::new_qual_param().

See Also

dials::trees()

Examples

```
split_func()
prune_func()
```

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