

Package: maize (via r-universe)

September 10, 2024

Title Specialty Kernels for SVMs

Version 0.0.0.9031415

Description Bindings for svm kernels via kernlab for use with the 'parsnip' package. Specifically related to specialty kernels for support vector machines not available in parsnip. package includes interface for various kernlab kernels and custom kernels too.

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Encoding UTF-8

Roxygen list(markdown = TRUE)

RoxygenNote 7.3.2

Imports parsnip, rlang, tibble

Depends R (>= 2.10)

LazyData true

Repository <https://frankiethull.r-universe.dev>

RemoteUrl <https://github.com/frankiethull/maize>

RemoteRef HEAD

RemoteSha a0931e35838fd71196bd7c80055e41276cdb2e02

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corn_data	<i>Synthetic Corn Dataset for Corny Example</i>
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Description

Synthetic Corn Dataset for Corny Example

Details

Asked Claude Sonnet for a corn data given the README story problem

Value

corn_data a tibble

Source

claude-3-5-sonnet-20240620

Examples

```
data(corn_data)
str(corn_data)
```

svm_anova_rbf	<i>ANOVA RBF Support Vector Machine</i>
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Description

anova rbf for support vector machines

Usage

```
svm_anova_rbf(
  mode = "unknown",
  engine = "kernlab",
  cost = NULL,
  anova_rbf_sigma = NULL,
  degree = NULL,
  margin = NULL
)
```

Arguments

mode	regression or classification
engine	kernlab ksvm
cost	A positive number for the cost of predicting a sample within or on the wrong side of the margin
anova_rbf_sigma	sigma parameter for anova rbf
degree	degree parameter for anova rbf
margin	A positive number for the epsilon in the SVM insensitive loss function (regression only)

svm_bessel

*Bessel Support Vector Machine***Description**

bessel kernel for support vector machines

Usage

```
svm_bessel(
  mode = "unknown",
  engine = "kernlab",
  cost = NULL,
  bessel_sigma = NULL,
  degree = NULL,
  order = NULL,
  margin = NULL
)
```

Arguments

mode	regression or classification
engine	kernlab ksvm
cost	A positive number for the cost of predicting a sample within or on the wrong side of the margin
bessel_sigma	sigma parameter for bessel
degree	degree parameter for bessel
order	order parameter for bessel
margin	A positive number for the epsilon in the SVM insensitive loss function (regression only)

svm_cauchy	<i>Cauchy Support Vector Machine</i>
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Description

cauchy kernel for support vector machines

Usage

```
svm_cauchy(
  mode = "unknown",
  engine = "kernlab",
  cost = NULL,
  margin = NULL,
  sigma = NULL
)
```

Arguments

mode	regression or classification
engine	kernlab ksvm
cost	A positive number for the cost of predicting a sample within or on the wrong side of the margin
margin	A positive number for the epsilon in the SVM insensitive loss function (regression only)
sigma	a sigma parameter for cauchy kernels

svm_cossim	<i>Cosine Similarity Support Vector Machine</i>
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Description

cossim kernel for support vector machines

Usage

```
svm_cossim(mode = "unknown", engine = "kernlab", cost = NULL, margin = NULL)
```

Arguments

mode	regression or classification
engine	kernlab ksvm
cost	A positive number for the cost of predicting a sample within or on the wrong side of the margin
margin	A positive number for the epsilon in the SVM insensitive loss function (regression only)

`svm_fourier`*Fourier Support Vector Machine*

Description

fourier kernel for support vector machines

Usage

```
svm_fourier(  
  mode = "unknown",  
  engine = "kernlab",  
  cost = NULL,  
  margin = NULL,  
  sigma = NULL  
)
```

Arguments

<code>mode</code>	regression or classification
<code>engine</code>	kernlab ksvm
<code>cost</code>	A positive number for the cost of predicting a sample within or on the wrong side of the margin
<code>margin</code>	A positive number for the epsilon in the SVM insensitive loss function (regression only)
<code>sigma</code>	a sigma parameter for fourier kernels

`svm_laplace`*Laplacian Support Vector Machine*

Description

laplacian kernel for support vector machines

Usage

```
svm_laplace(  
  mode = "unknown",  
  engine = "kernlab",  
  cost = NULL,  
  margin = NULL,  
  laplace_sigma = NULL  
)
```

Arguments

mode	regression or classification
engine	kernlab ksvm
cost	A positive number for the cost of predicting a sample within or on the wrong side of the margin
margin	A positive number for the epsilon in the SVM insensitive loss function (regression only)
laplace_sigma	sigma parameter for laplacian

svm_sorensen	<i>Sorensen Support Vector Machine</i>
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Description

sorensen kernel for support vector machines which is used as a graph kernel for chemical informatics

Usage

```
svm_sorensen(mode = "unknown", engine = "kernlab", cost = NULL, margin = NULL)
```

Arguments

mode	regression or classification
engine	kernlab ksvm
cost	A positive number for the cost of predicting a sample within or on the wrong side of the margin
margin	A positive number for the epsilon in the SVM insensitive loss function (regression only)

svm_spline	<i>Spline Support Vector Machine</i>
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Description

spline kernel for support vector machines

Usage

```
svm_spline(mode = "unknown", engine = "kernlab", cost = NULL, margin = NULL)
```

Arguments

mode	regression or classification
engine	kernlab ksvm
cost	A positive number for the cost of predicting a sample within or on the wrong side of the margin
margin	A positive number for the epsilon in the SVM insensitive loss function (regression only)

svm_tanh

*Hyperbolic Tangent Support Vector Machine***Description**

tanh kernel for support vector machines

Usage

```
svm_tanh(
  mode = "unknown",
  engine = "kernlab",
  cost = NULL,
  scale_factor = NULL,
  margin = NULL
)
```

Arguments

mode	regression or classification
engine	kernlab ksvm
cost	A positive number for the cost of predicting a sample within or on the wrong side of the margin
scale_factor	scale parameter for tanh
margin	A positive number for the epsilon in the SVM insensitive loss function (regression only)

svm_tanimoto	<i>Tanimoto Support Vector Machine</i>
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Description

tanimoto kernel for support vector machines which is used as a graph kernel for chemical informatics

Usage

```
svm_tanimoto(mode = "unknown", engine = "kernlab", cost = NULL, margin = NULL)
```

Arguments

mode	regression or classification
engine	kernlab ksvm
cost	A positive number for the cost of predicting a sample within or on the wrong side of the margin
margin	A positive number for the epsilon in the SVM insensitive loss function (regression only)

svm_tstudent	<i>T-Student Support Vector Machine</i>
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Description

t-student kernel for support vector machines

Usage

```
svm_tstudent(  
  mode = "unknown",  
  engine = "kernlab",  
  cost = NULL,  
  margin = NULL,  
  degree = NULL  
)
```

Arguments

mode	regression or classification
engine	kernlab ksvm
cost	A positive number for the cost of predicting a sample within or on the wrong side of the margin
margin	A positive number for the epsilon in the SVM insensitive loss function (regression only)
degree	a degree parameter for tstudent kernels

svm_wavelet

*Wavelet Support Vector Machine***Description**

wavelet kernel for support vector machines

Usage

```
svm_wavelet(
  mode = "unknown",
  engine = "kernlab",
  cost = NULL,
  margin = NULL,
  sigma = NULL,
  a = 1,
  c = NULL,
  h = NULL
)
```

Arguments

mode	regression or classification
engine	kernlab ksvm
cost	A positive number for the cost of predicting a sample within or on the wrong side of the margin
margin	A positive number for the epsilon in the SVM insensitive loss function (regression only)
a	scale adjustment parameter for wavelet kernels (temp name)
c	dist adjustment parameter for wavelet kernels can be NULL (temp name)
h	wavelet function for wavelet kernel, default wavelet if NULL (temp name)

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