root

Name	GaussianProcessRegression
Version	1.0
Description	RFF-accelerated Gaussian Process Regression
License	SeeLICENSE.TXT
Copyright	Copyright (C) 2022 HPCC SystemsÂő
Authors	HPCCSystems
DependsOn	ML_Core
Platform	8.4.0

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GPRI

IMPORTS

python3 | ML_Core.Types | std.system.Thorlib | Types | Internal.rffGPR |

DESCRIPTIONS

`GPRI` GPRI

	GPRI

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Children

1. GetSession : Initialize GPR on all nodes and return a session ID to be used in the following process

2. fit : Train a RFF acclerated GPR model

3. predict : Predict using trained GPR model

`GETSESSION` GetSession

GPRI \

INTEGER	**GetSession**
`()`	

Initialize GPR on all nodes and return a session ID to be used in the following process. This function needs to be called before any other process.

RETURN **INTEGER8** — sessID session ID to identify this session.

FIT fit

GPRI \

`DATASET(Layout_model2)`	**fit**
`(INTEGER session, DATASET(NumericField) x,` `DATASET(NumericField) y, UNSIGNED4 rff_dim = 10, REAL sigma = 1)`	

Train a RFF acclerated GPR model

PARAMETER <u>session</u> ||| INTEGER8 — No Doc

PARAMETER <u>x</u> ||| TABLE (NumericField) — No Doc

PARAMETER <u>y</u> ||| TABLE (NumericField) — No Doc

PARAMETER <u>rff_dim</u> ||| UNSIGNED4 — No Doc

PARAMETER <u>sigma</u> ||| REAL8 — No Doc

RETURN **TABLE (layout_model2)** — Gaussian process regression model in Layout_model2 foramt.

PARAMS session session ID for the training process.

PARAMS x independent training data.

PARAMS y dependent training data.

PARAMS rff_dim dimesion of random fourier features.

PARAMS sigma squre root of the variance.

PREDICT **predict**

GPRI \

`DATASET(NumericField)`	**predict**
`(INTEGER session, DATASET(Layout_model2) mod,` `DATASET(NumericField) x)`	

Predict using trained GPR model

PARAMETER <u>session</u> ||| INTEGER8 — No Doc

PARAMETER <u>mod</u> ||| TABLE (layout_model2) — No Doc

PARAMETER <u>x</u> ||| TABLE (NumericField) — No Doc

RETURN **TABLE (NumericField)** — prediction result in NumericField format

PARAMS session session ID for the predicting process.

PARAMS mod trained GPR model.

PARAMS x input data for prediction.

Types

DESCRIPTIONS

`TYPES` Types

	Types

No Documentation Found

Children

1. initParams : No Documentation Found

`INITPARAMS` initParams

Types \

	initParams

No Documentation Found

`FIELD` **nodeid** ||| UNSIGNED4 — No Doc

`FIELD` **nnodes** ||| UNSIGNED4 — No Doc