arpack_wrapper

NAME

arpack_wrapper - a frovedis module supports singular value decomposition on sparse data using arpack routines.

SYNOPSIS

import frovedis.matrix.wrapper.ARPACK

Public Member Functions

ARPACK.computeSVD (data, k)

DESCRIPTION

This module provides interface to compute singular value decomposition on sparse data using arpack native routines at frovedis server side.

Detailed Description

computeSVD (data, k)

Parameters
data: Any scipy sparse matrix or python array-like structure or an instance of FrovedisCRSMatrix.
k: An integer value to specify the number of singular values to compute.

Purpose
It computes the singular value decomposition on the sparse data at frovedis side. Once done, it returns a GesvdResult object containing the proxy of the results at frovedis server.

When required, the spark client can convert back the frovedis server side SVD result to numpy data by calling to_numpy_results() function on GesvdResult structure.

For example,

```
res = ARPACK.computeSVD(data,2) // compute 2 singular values for the given data
p_res = res.to_numpy_results()
```

Return Value
On success, it returns an object of GesvdResult type containing the proxy of SVD results at frovedis server side. If any error occurs, it throws an exception.