Radial Basis Functions: nagdmc_predict_rbf

Purpose

 ${\bf nagdmc_predict_rbf}$ computes a prediction for a radial basis function (RBF) model fitted by ${\bf nagdmc_rbf}.$

Declaration

```
#include <nagdmc.h>
void nagdmc_predict_rbf(double data[], double model[], double *fv, int *info);
```

Parameters

1:	data[] - double	Input
	On entry: a single data record with the independent variables in the same indexes as the model.	used to fit
2:	model[] - double	Input
	On entry: the fitted RBF model as returned by nagdmc_rbf .	
3:	${f fv}-{ t double}$ *	Output
	On exit: the predicted value computed by the RBF model.	
4:	info - int *	Output
	On exit: info gives information on the success of the function call:	

46: the model information has been corrupted.

Notation

data data record, x. fv fitted value, z.

Description

Let w_k , for k = 1, 2, ..., t, be the weights for an RBF model containing t RBF functions, and b be the value of the intercept term in the model. The RBF model prediction, z, for the value of the dependent variable in a data record x is given by:

$$z = \sum_{k=1}^{t} w_k h_k + b,$$

where h_k is a radial function of the distance between x and the kth centre in the model (see the 'Description' in **nagdmc_rbf**).

The values of weights; the kind of RBF used to calculate predictions; the location of the centres in the input space; and the function used to calculate distances are passed to **nagdmc_predict_rbf** by the parameter named **model**.

References and Further Reading

None.

See Also

rbf_ex.c the example calling program.