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1 """
2 basis_expansions: Basis Expansions for Regression.
3
4 The basis_expansions module contains classes for basis expansions to be used in
5 regression models. Given a feature x, a basis expansions for that feature x is
6 a collection of functions
7
8     f_0, f_1, f_2, ...
9
10 that are meant to be applied to the feature to construct derived features in a
11 regression model. The functions in the expansions are often chosen to allow
12 the model to adapt to non-linear shapes in the predictor/response relationship.
13
14 Each class in this module conforms to the scikit-learn transformer api, and
15 work on both numpy.array and pandas.Series objects.
16
17 The following basis expansions are supported:
18     - Binner: Cut the range of x into bins, and create indicator features for
19       bin membership.
20     - GaussianKernel: Use gaussian kernels around specified center points as
21       features. Also known as "radial basis functions" in some circles.
22     - Polynomial: Polynomial expansion of a given degree.
23     - LinearSpline: Piecewise linear spline.
24     - CubicSpline: Piecewise cubic spline.
25     - NaturalCubicSpline: Piecewise cubic spline constrained to be linear
26       outside of knots.
27 """
28 import numpy as np
```