Isotonic regression

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Unknown directive type "currentmodule".

```
.. currentmodule:: sklearn.isotonic
```

The class :class:`IsotonicRegression` fits a non-decreasing real function to 1-dimensional data. It solves the following problem:

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minimize $\sum_i w_i (y_i - \hat{y}_i)^2$

subject to $\hat{y}_i \leq \hat{y}_j$ whenever $X_i \leq X_j$,

where the weights w_i are strictly positive, and both X and y are arbitrary real quantities.

The *increasing* parameter changes the constraint to $\hat{y}_i \geq \hat{y}_j$ whenever $X_i \leq X_j$. Setting it to 'auto' will automatically choose the constraint based on Spearman's rank correlation coefficient.

:class:`IsotonicRegression` produces a series of predictions $\hat{y}_i$ for the training data which are the closest to the targets y in terms of mean squared error. These predictions are interpolated for predicting to unseen data. The predictions of :class:`IsotonicRegression` thus form a function that is piecewise linear:

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