Mentor Help
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Further Learning and Resources

Bias and Variance

this **Wikipedia article on the bias-variance tradeoff** discusses the central probler learning.

Ensemble methods in the scikit-learn library:

- **BaggingClassifier**
  - Discusses how the Bagging classifier is used to fit base classifiers each the original dataset and then aggregate their individual predictions (eit averaging) to form a final prediction.

- **RandomForestClassifier**
  - Discusses how the RandomForest classifier fits a number of decision tr various sub-samples of the dataset and uses averaging to improve the and control over-fitting.

- **AdaBoostClassifier**
  - Discusses how the AdaBoost classifier fits on the original dataset and th copies of the classifier on the same dataset but where the weights of ir instances are adjusted such that subsequent classifiers focus more on

Another really useful guide for ensemble methods, which can also all be extendec problems, can be found **in the documentation here**.

Boosting

1. **The original paper** - A link to the original paper on boosting by Yoav Freund Schapire.
2. **An explanation about why boosting is so important** - A great article on boo master, Ben Gorman.
3. **A useful Quora post** - A number of useful explanations about boosting.

AdaBoost

- Here is the original **paper** from Freund and Schapire that is a short overview the boosting algorithm AdaBoost, and explains the underlying theory of boo explanation of why boosting often does not suffer from overfitting as well as relationship to support-vector machines.
- A follow-up **paper** from the same authors regarding several experiments wit
- A great **tutorial** by Schapire explaining the many perspectives and analyses a been applied to explain or understand it as a learning method, with compari strengths and weaknesses of the various approaches.