**Machine Learning : Ensemble Methods**

**Ensemble Methods**

* **Ensemble methods are learning models that achieve accuracy through combining the opinions and biases of multiple learners.**
* **Ensembles are inherently parallel, training and testing in parallel**

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* **Combining multiple classifiers through voting**
* **Each classifier trained independently**
* **Predict class label by voting**
* **An ensemble of different classifiers is good because they all make different errors, and this can lead to higher accuracy overall**
* **Typically, classifiers that make the wrong prediction are out voted**
* **Prefer base classifiers with high variance**
* **N base classifiers errors are uncorrelated, so they are not likely to make the same mistake on the same data points and the error rate is**

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* **Weak learners better than random**

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