ML Topics and Libraries

# 1. Approaches

Decision Trees  
Artificial Neural Nets  
Genetic Algorithms  
Bayesian Learning  
Genetic Algorithms  
Reinforcement Learning  
Deep Learning

# 2. Related Topics

Regression (Linear/Non-Linear /Logistic)  
Support Vector Machines  
Principal Component Analysis  
Feature Selection  
Dimensionality Reduction

# 3.Libraries

### Python

[**Scikit-learn**](http://scikit-learn.org/): comprehensive and easy to use  
[**PyBrain**](http://pybrain.org/): Neural networks are one thing that are missing from SciKit-learn,   
[**nltk**](http://nltk.org/): really useful if you’re doing anything NLP or text mining related.  
[**Theano**](http://www.deeplearning.net/software/theano/): efficient computation of mathematical expressions using GPU. Excellent for deep learning.  
[**Pylearn2**](http://deeplearning.net/software/pylearn2/): machine learning toolbox built on top of Theano - in very early stages of development.

### Java

[**Spark**](http://spark.apache.org/): Apache’s new upstart, supposedly up to a hundred times faster than Hadoop, now includes MLLib, which contains a good selection of machine learning algorithms, including classification, clustering and recommendation generation Development can be in Python as well as JVM languages  
[**Mahout**](https://mahout.apache.org/): Apache’s machine learning framework built on top of Hadoop, this looks promising, but comes with all the baggage and overhead of Hadoop.  
[**Mallet**](http://mallet.cs.umass.edu/): another Java based library with an emphasis on document classification. I’m not so familiar with this one, but if you have to use Java this is bound to be better than Weka.  
[**JSAT**](https://code.google.com/p/java-statistical-analysis-tool/): stands for “Java Statistical Analysis Tool” Looks pretty cool.

### Others

Octave  
TensorFlow