Support Vector Machine (SVM)

* Describe one real-world application in industry where the model can be applied.
* What are the strengths of the model; when does it perform well?
  + Good to use with high dimensional space
  + Could be use with different kernel functions
* What are the weaknesses of the model; when does it perform poorly?
  + Poor performance when # features >> # samples
  + Does not provides probability estimates directly
  + Requires normalization and dummy variables setup
  + Slow execution time on sparse datasets
* What makes this model a good candidate for the problem, given what you know about the data?

Decision Trees

* Describe one real-world application in industry where the model can be applied.
* What are the strengths of the model; when does it perform well?
  + Simple to understand and could be visualized
  + Could be applied to both numerical and categorical data
  + Fast execution time
* What are the weaknesses of the model; when does it perform poorly?
  + Some cases could not generalize the data well due to tree complexity
  + If the input is not balanced, could generate biased trees
* What makes this model a good candidate for the problem, given what you know about the data?

Ensemble Methods (AdaBoost)

* Describe one real-world application in industry where the model can be applied.
* What are the strengths of the model; when does it perform well?
  + The estimators are built sequentially and, at the end, combined to aiming to reduce the overall bias
  + Earlier prediction errors are reweighted to a large value to improve the classification score
  + Fast execution time
* What are the weaknesses of the model; when does it perform poorly?
  + Could be sensitive to outliers
  + In some cases, it is less susceptible to the overfitting
* What makes this model a good candidate for the problem, given what you know about the data?

References

[Scikit-learn: Machine Learning in Python](http://jmlr.csail.mit.edu/papers/v12/pedregosa11a.html), Pedregosa *et al.*, JMLR 12, pp. 2825-2830, 2011.

<http://www.nickgillian.com/wiki/pmwiki.php/GRT/AdaBoost>

<https://en.wikipedia.org/wiki/AdaBoost>