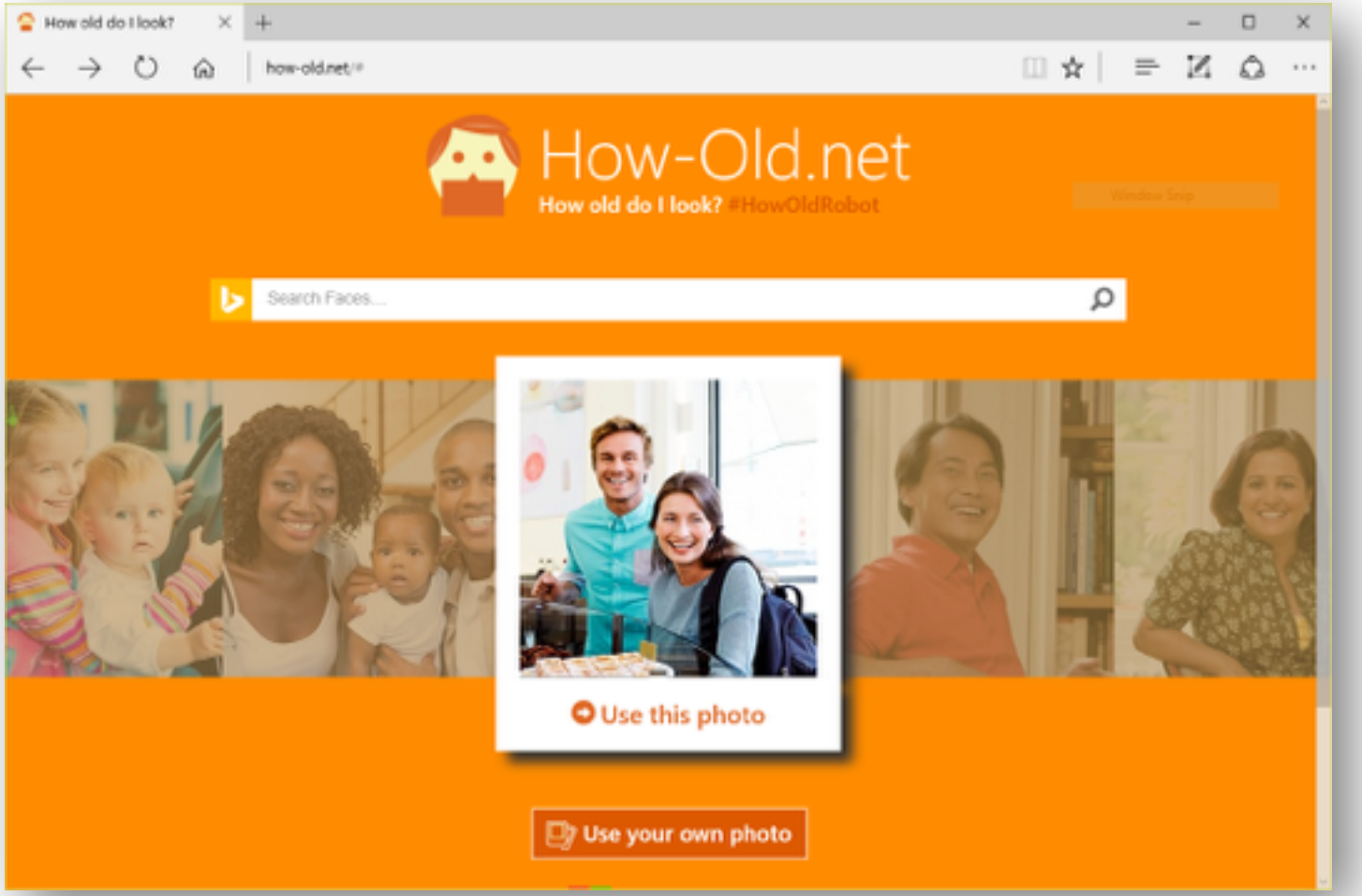
Azure Machine Learning

What is Machine Learning?

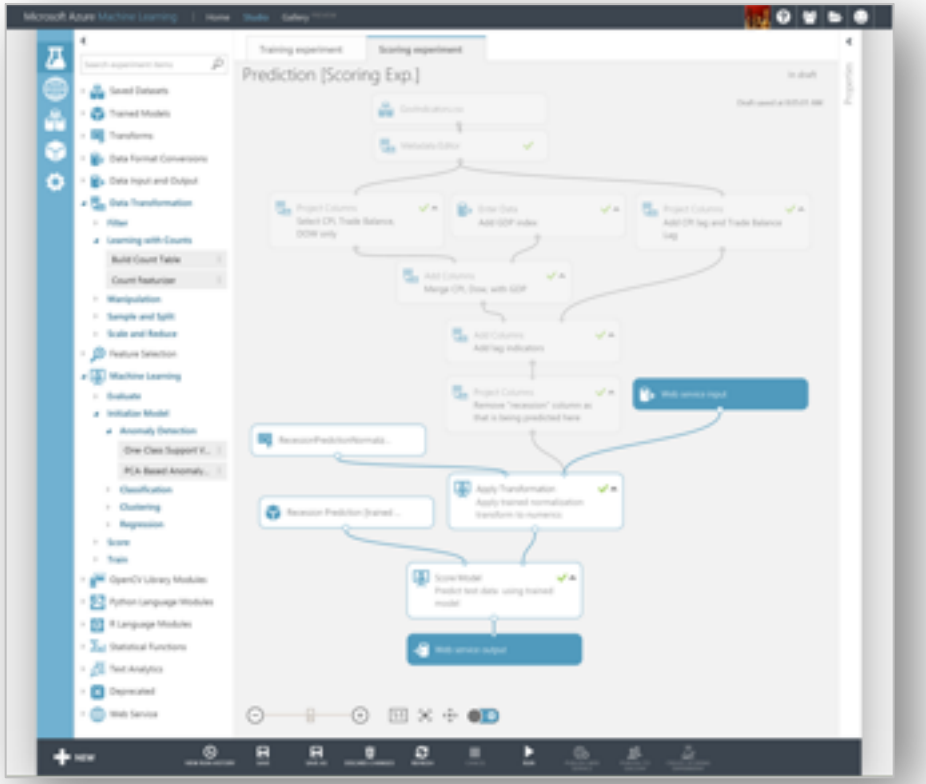
- Branch of computer science in which a computer "learns" from data in order to perform predictive analytics
  - Credit-card fraud detection
  - Online shopping recommendations
  - Self-driving cars and more
- Supervised learning
  - Regression and classification
- Unsupervised learning
  - Clustering

Machine Learning in Action



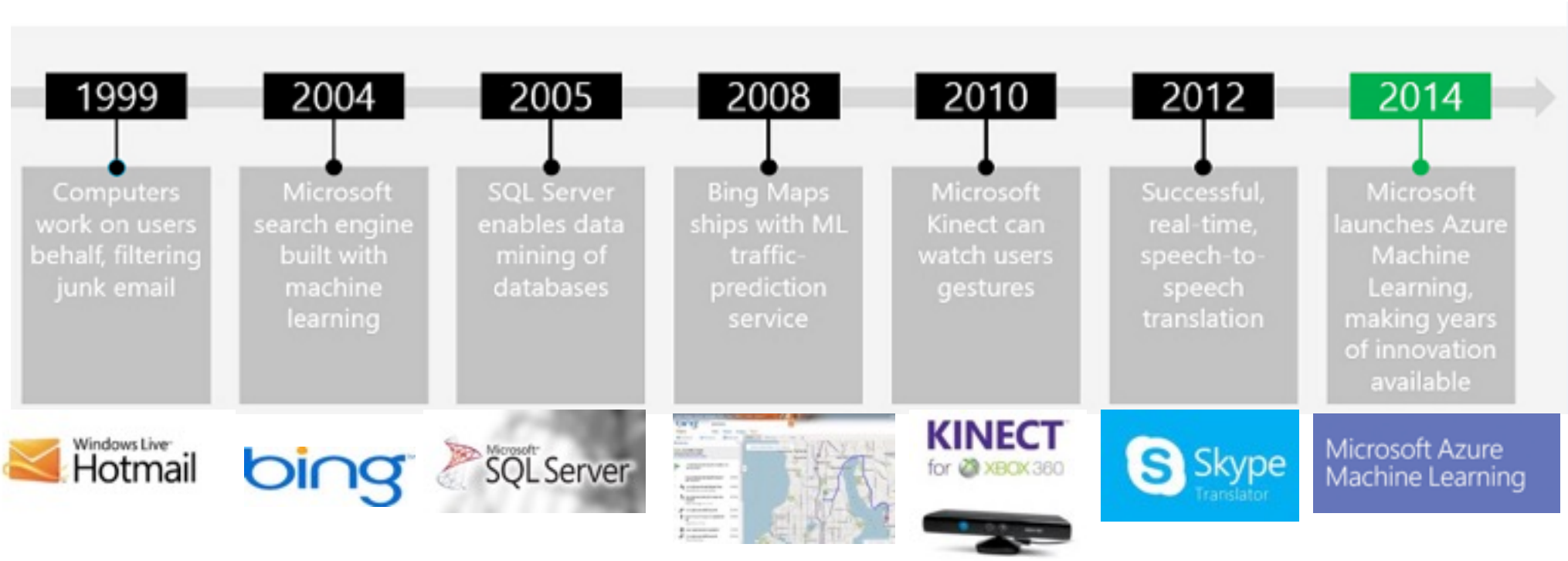
Azure Machine Learning

- Cloud service for building rich Machine Learning models
- ML Studio for composing models
  - Includes hundreds of modules
  - Includes common algorithms for classification, regression, and more
  - Supports numerous input formats
  - Supports R and Python
- Machine Learning for the masses



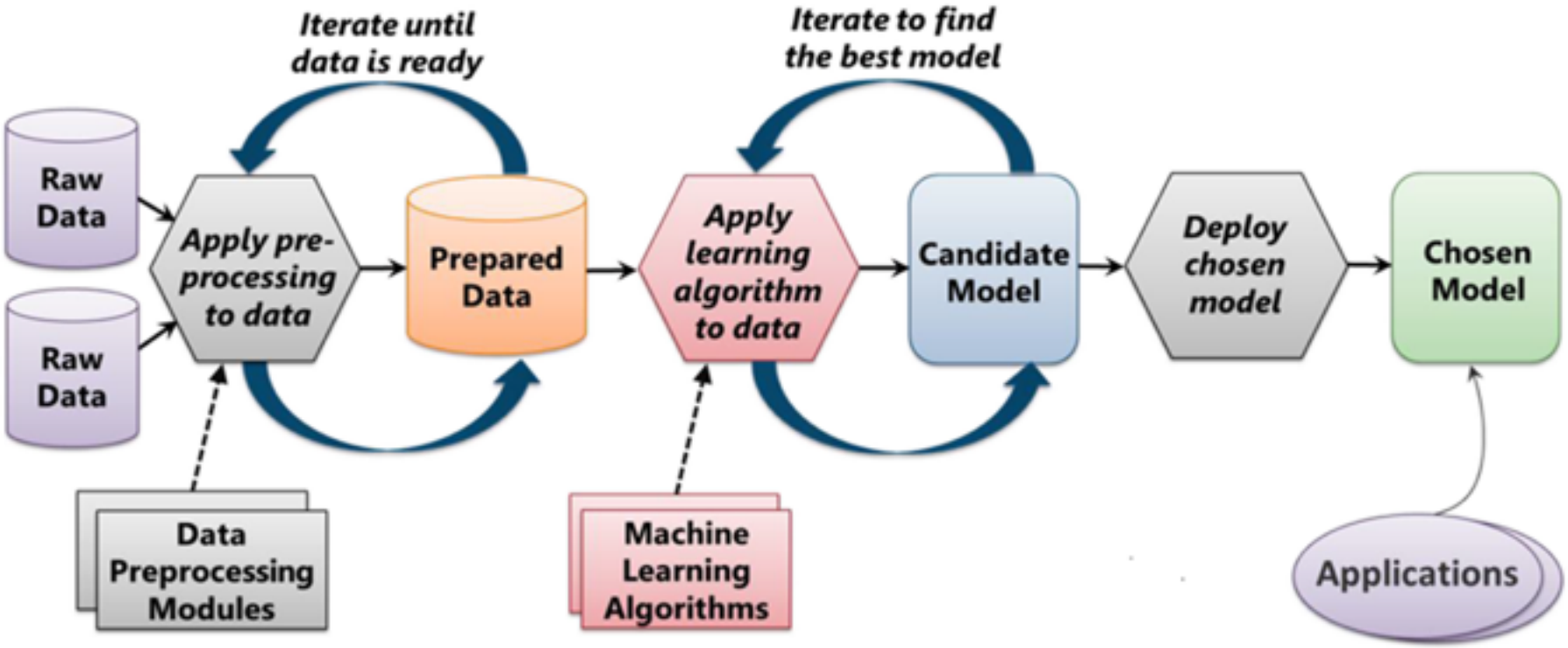
“I spent last semester building a regression model in Python, and I just did the same thing in 10 minutes with Azure ML”

Microsoft and Machine Learning



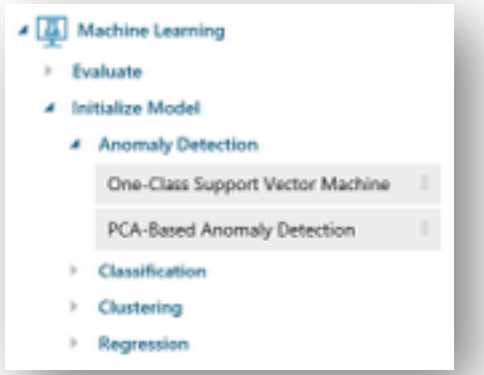
Modified from http://pulsweb.fr/predict-wine-quality-azureml

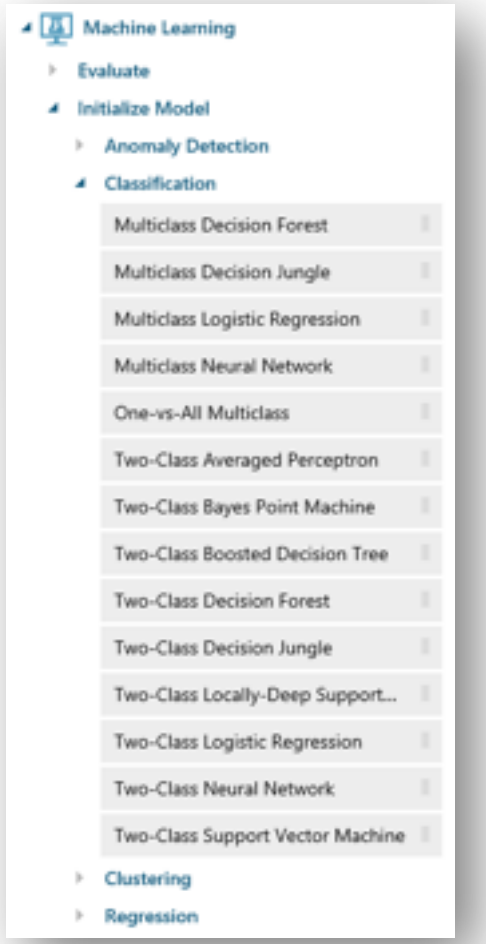
The Machine Learning Process

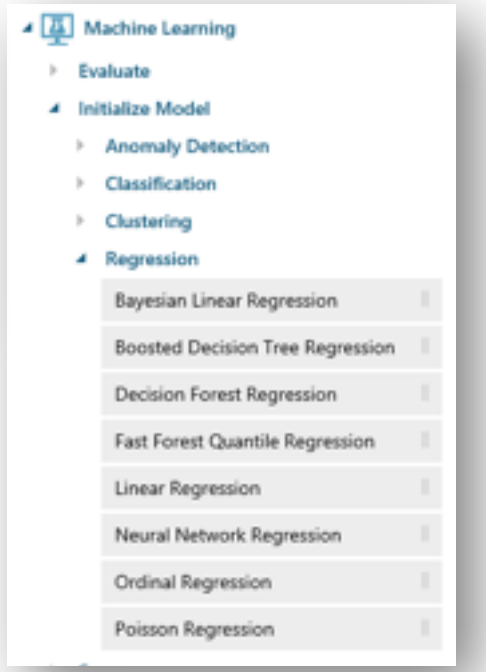


From "Introduction to Microsoft Azure" by David Chappell

Azure Machine Learning Algorithms

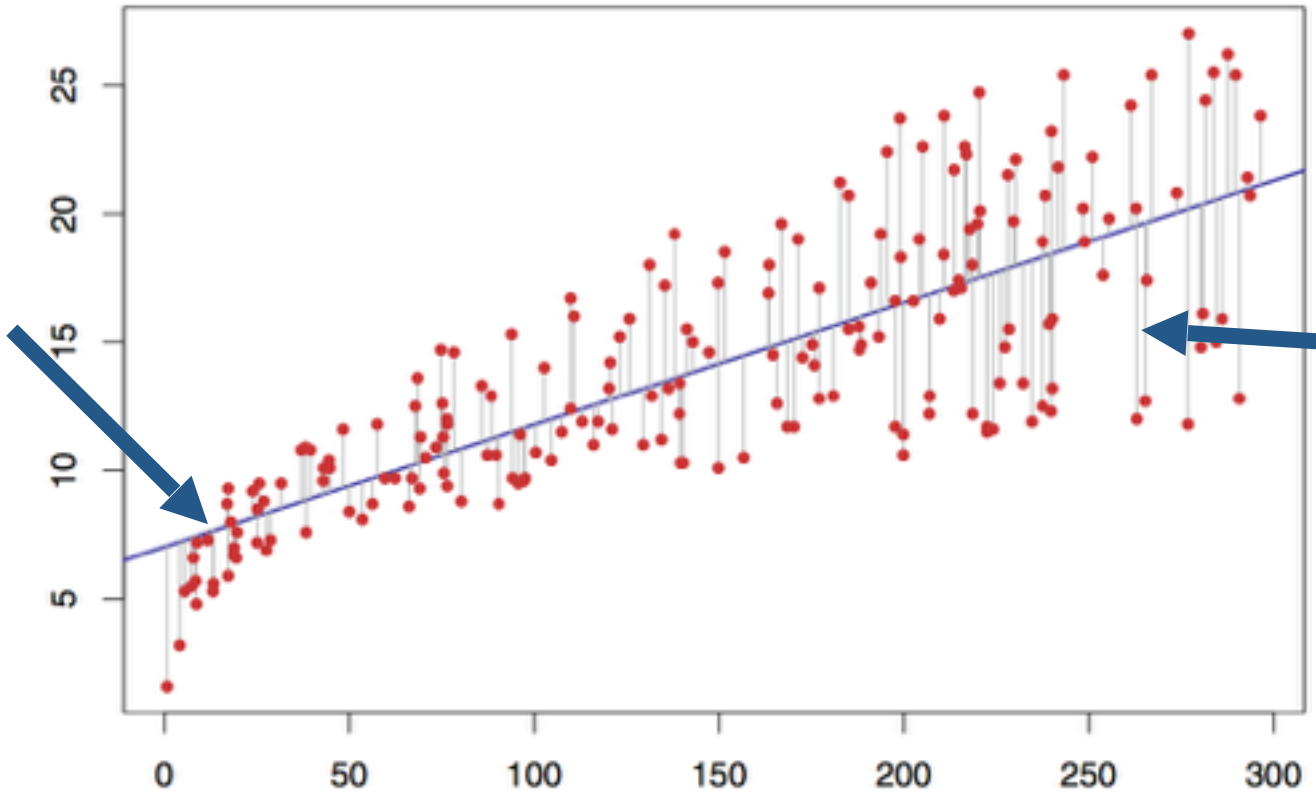






Simple (Univariate) Linear Regression

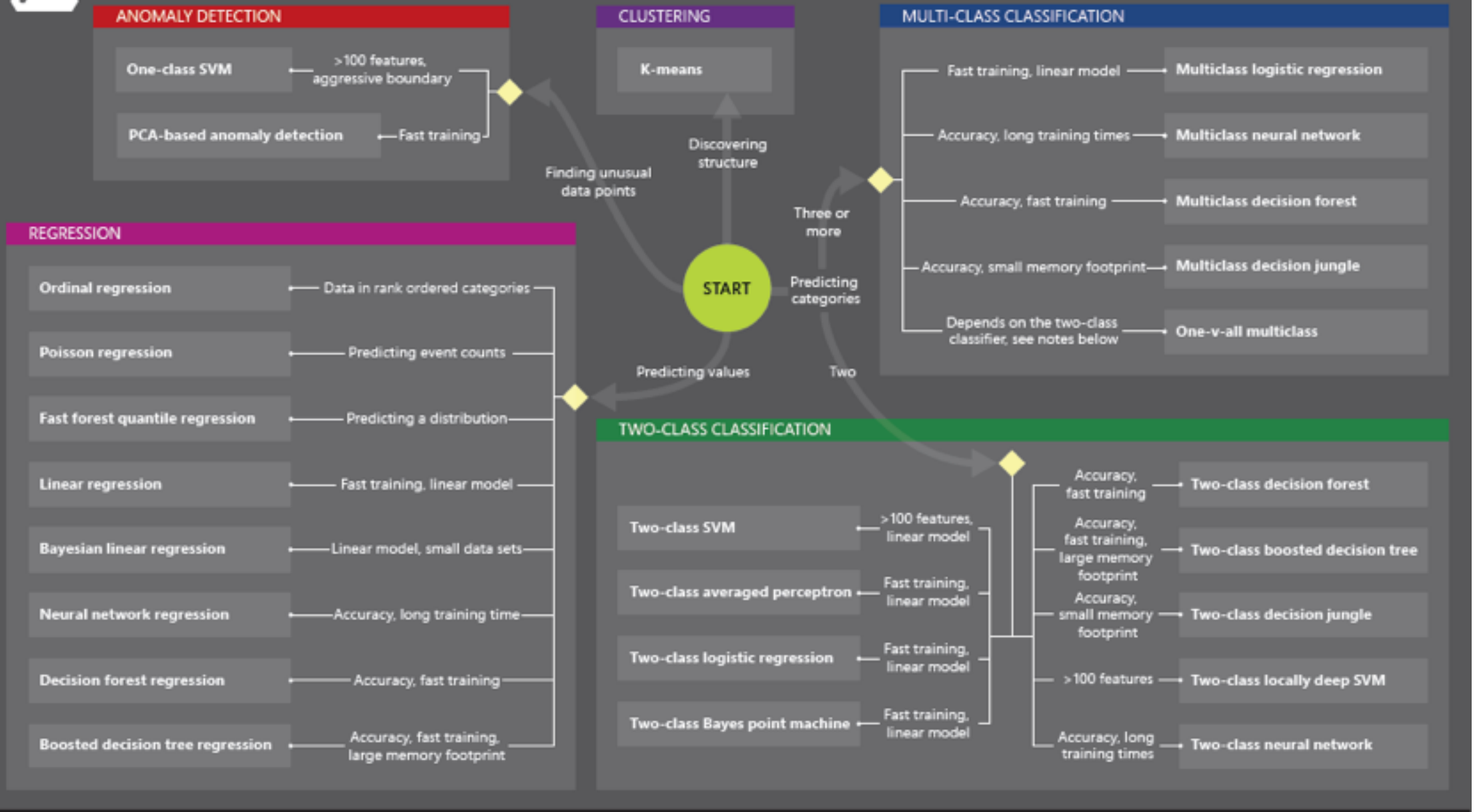
Regression line represented by an equation of the form $Y = b_0 + b_1X$ where Y is the dependent variable



Error between actual and computed output minimized using least-squares or gradient-descent method

Microsoft Azure Machine Learning: Algorithm Cheat Sheet

This cheat sheet helps you choose the best Azure Machine Learning Studio algorithm for your predictive analytics solution. Your decision is driven by both the nature of your data and the question you're trying to answer.



Created by the Azure Machine Learning Team

Email: AzurePoster@microsoft.com

Download this poster: http://aka.ms/MLCheatSheet

Microsoft

http://aka.ms/MLCheatSheet

Deploying as a Web Service

- A button click in ML Studio deploys a model as a Web service and provides sample code for calling it in three languages