

Big Data Business Models

Access

Opening up new data sources

Commodify

Assessment and commodification

Crossuse

New uses for existing data

Combine

Fusion of data sources

Pattern recognition

Testing

Modeling

Predictions

Visualisation

Efficiency

Planning

Innovation

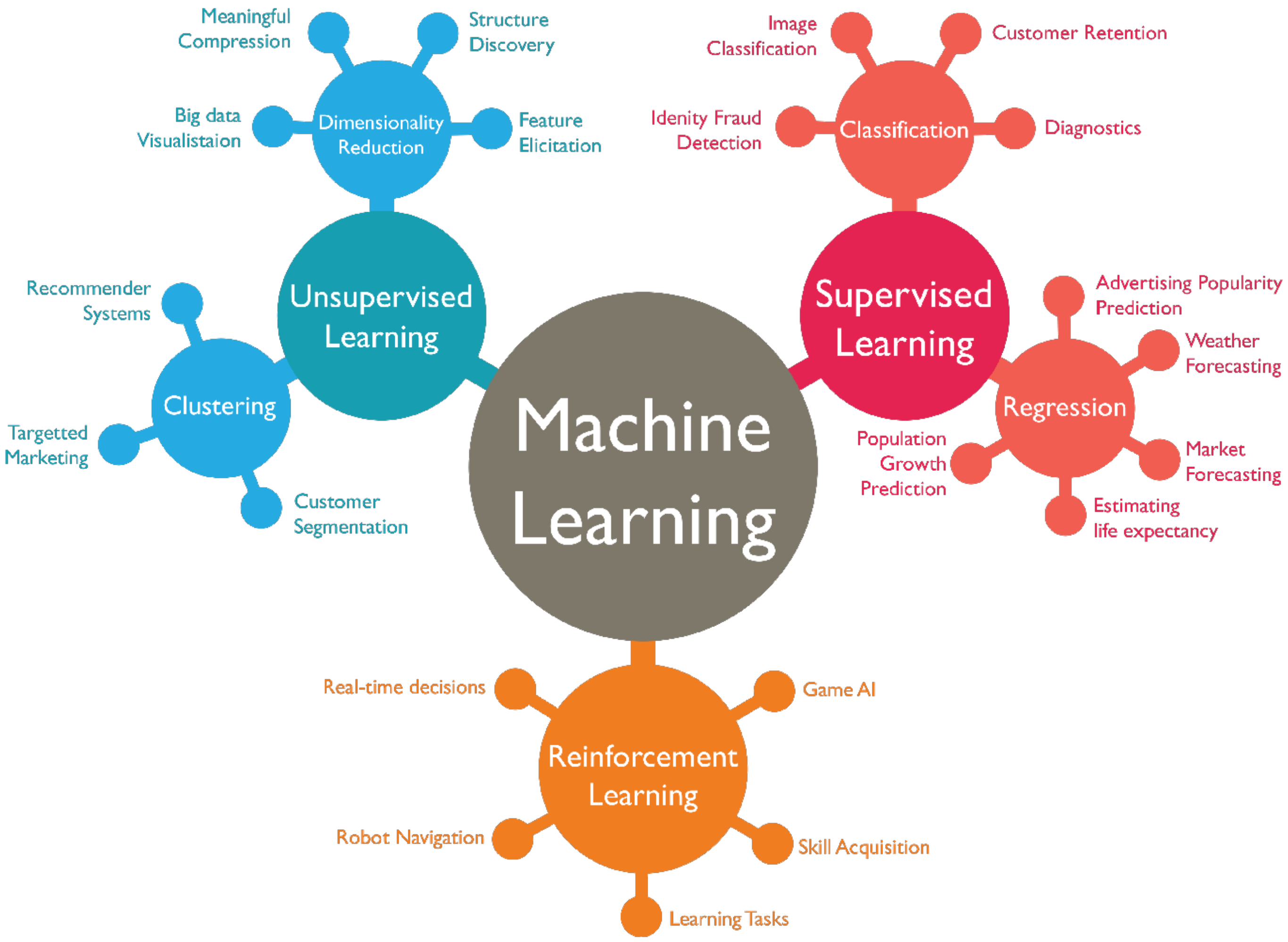
Customer Insights

Personalization

Quality

Intelligence





Why Big Data Now?

Confluence of 4 forces – Mobile, Social, Cloud and Information



Gartner's Nexus of Forces

A mostly complete chart of Neural Networks

©2016 Fjodor van Veen - asimovinstitute.org

-  Backfed Input Cell
-  Input Cell
-  Noisy Input Cell
-  Hidden Cell
-  Probablistic Hidden Cell
-  Spiking Hidden Cell
-  Output Cell
-  Match Input Output Cell
-  Recurrent Cell
-  Memory Cell
-  Different Memory Cell
-  Kernel
-  Convolution or Pool

Perceptron (P)



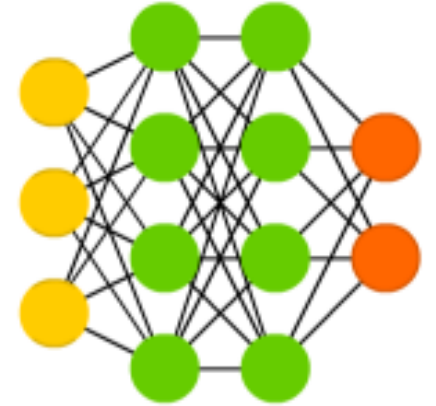
Feed Forward (FF)



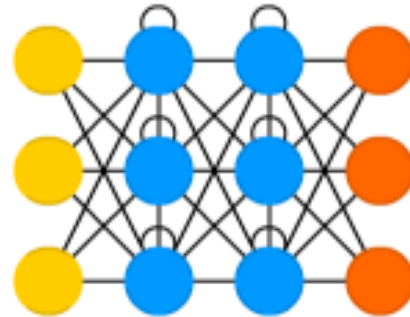
Radial Basis Network (RBF)



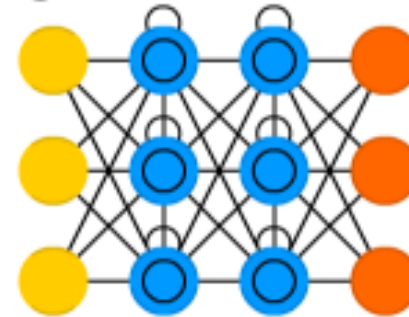
Deep Feed Forward (DFF)



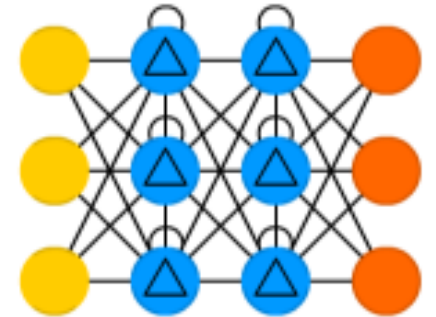
Recurrent Neural Network (RNN)



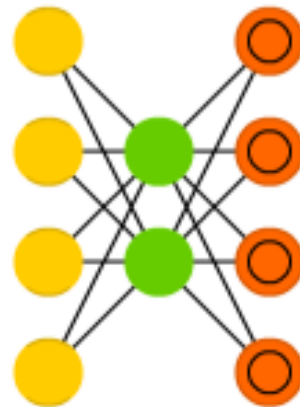
Long / Short Term Memory (LSTM)



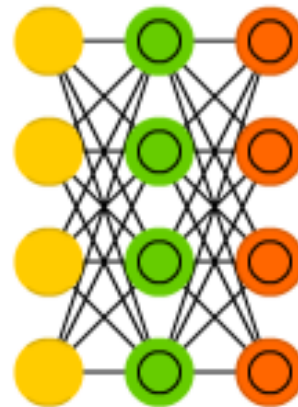
Gated Recurrent Unit (GRU)



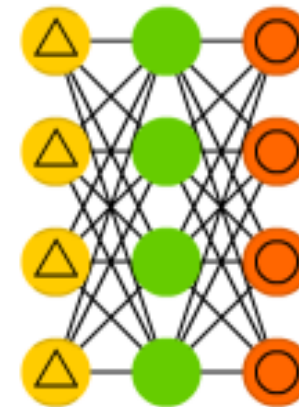
Auto Encoder (AE)



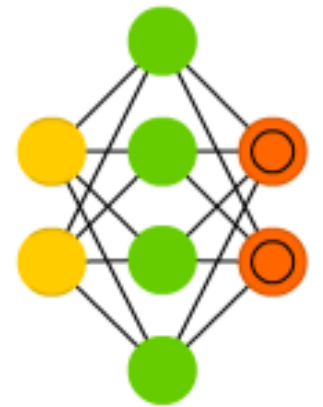
Variational AE (VAE)



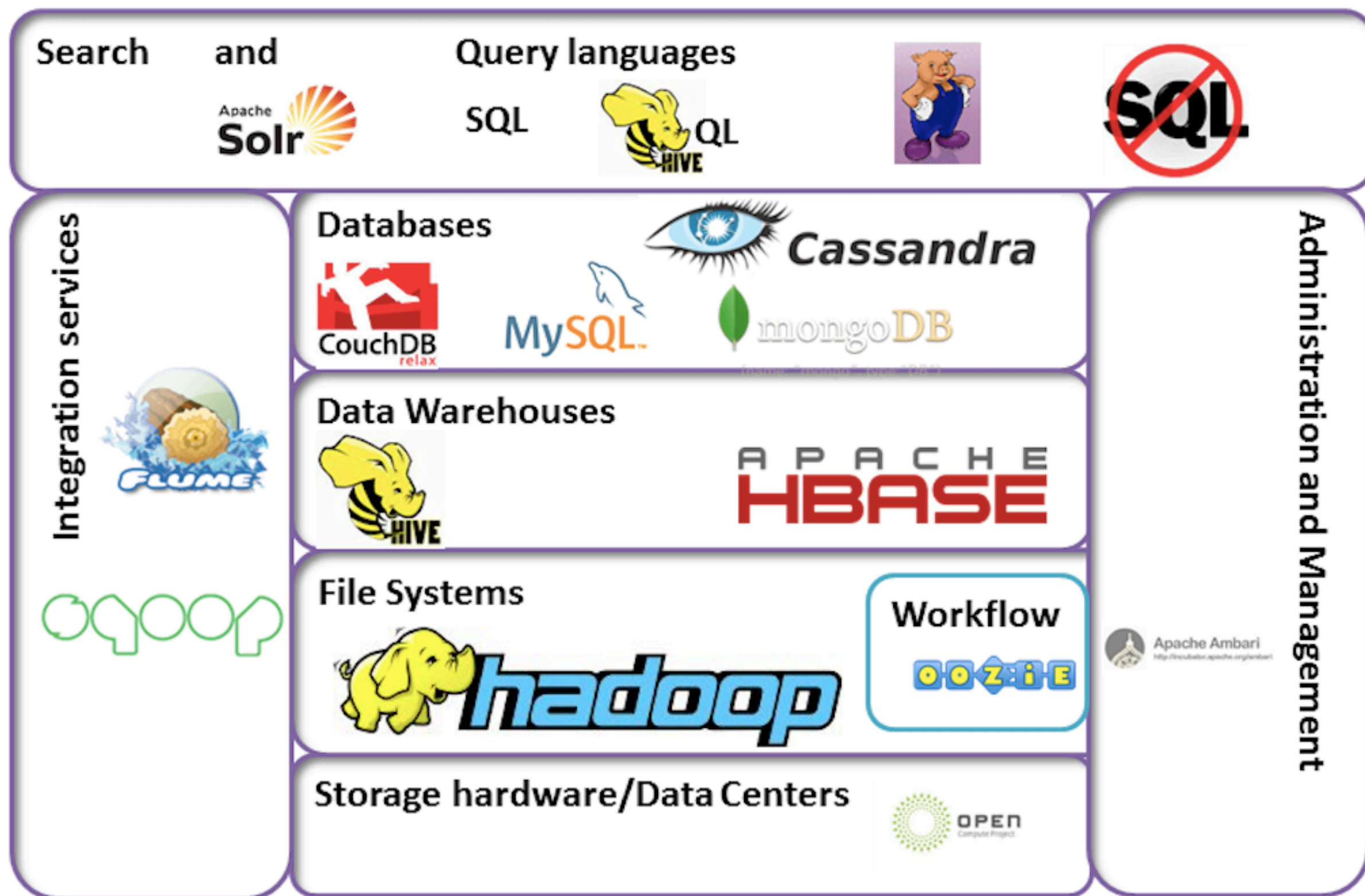
Denoising AE (DAE)



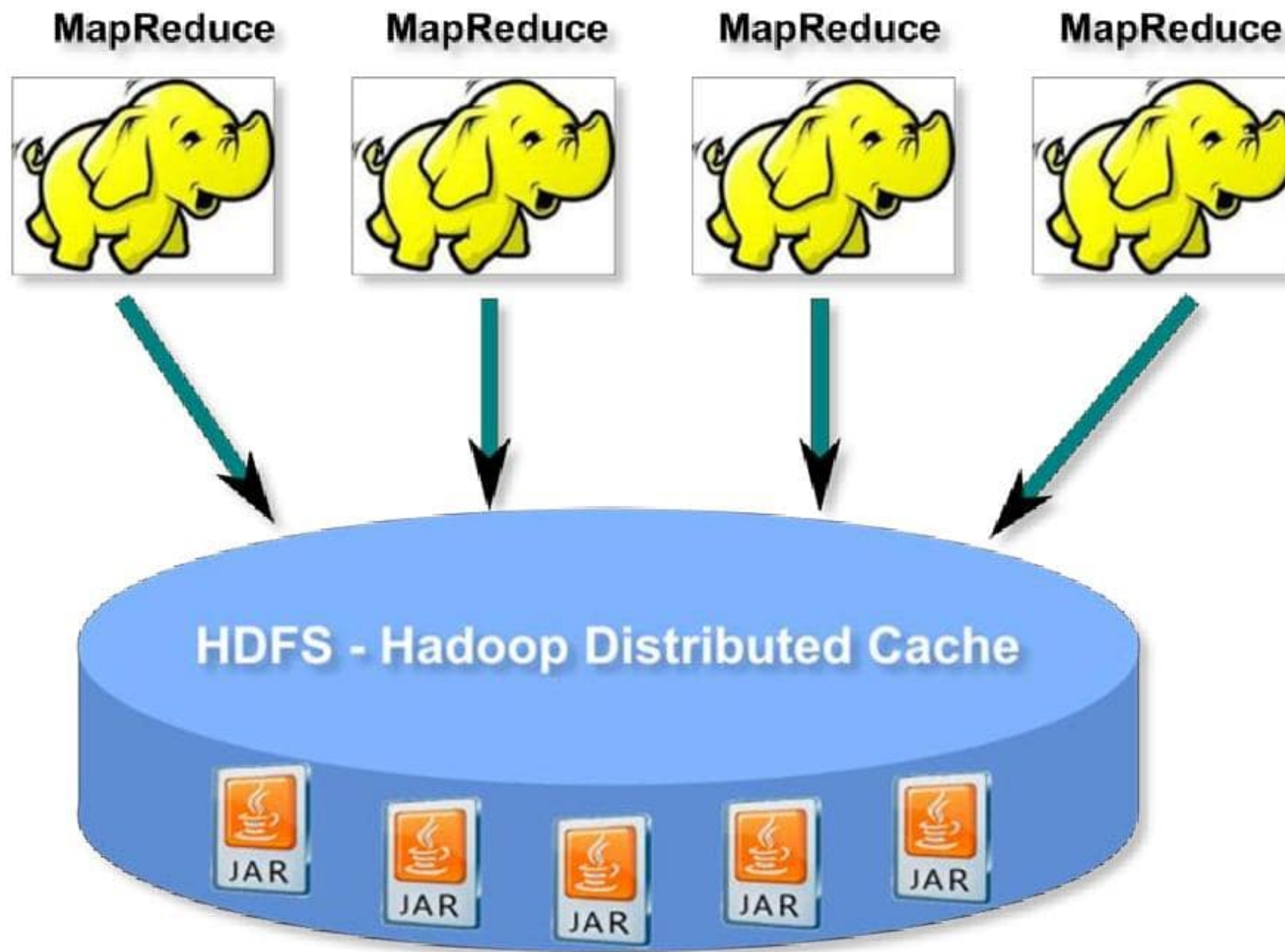
Sparse AE (SAE)



The Big Data Open Source Technology Stack



Distributed Cache



NoSQL

APACHE
HBASE



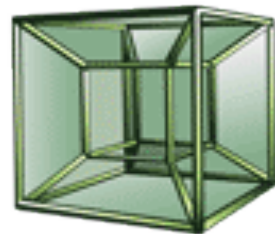
Cassandra



CouchDB
relax



riak



mongoDB

HYPERTABLE^{INC}



Neo4j



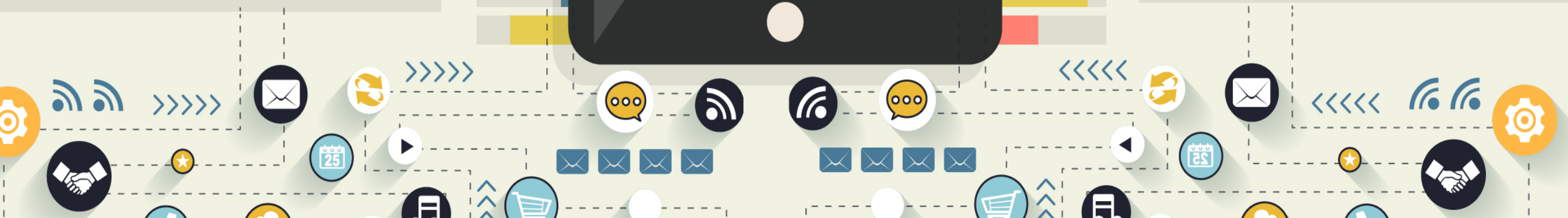
redis



The Differences Between PYTHON & R

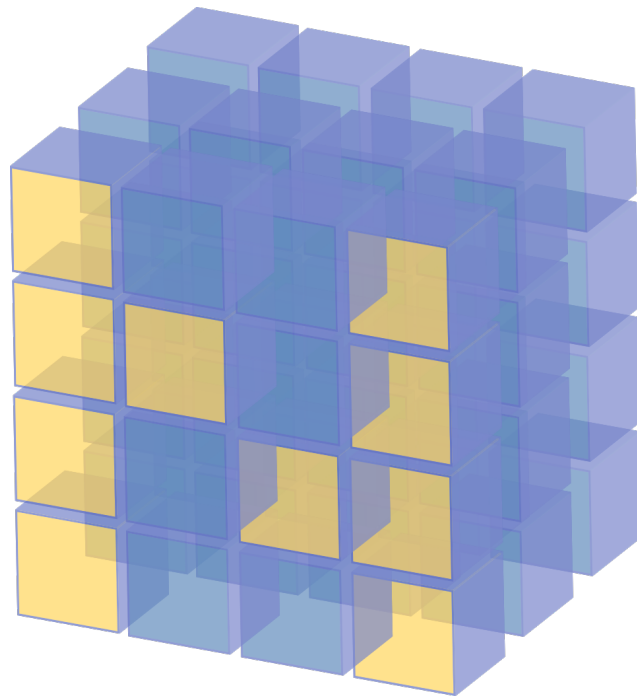
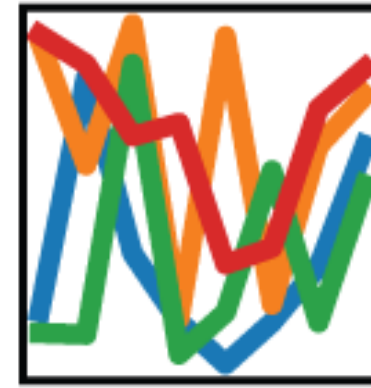
- A data analysis tool
- Has advanced libraries like Panda, Numpy & Scipy

- More of statistical analysis tool.
- Integrates well with other computer languages like C++, Java, and C



pandas

$$y_{it} = \beta' x_{it} + \mu_i + \epsilon_{it}$$

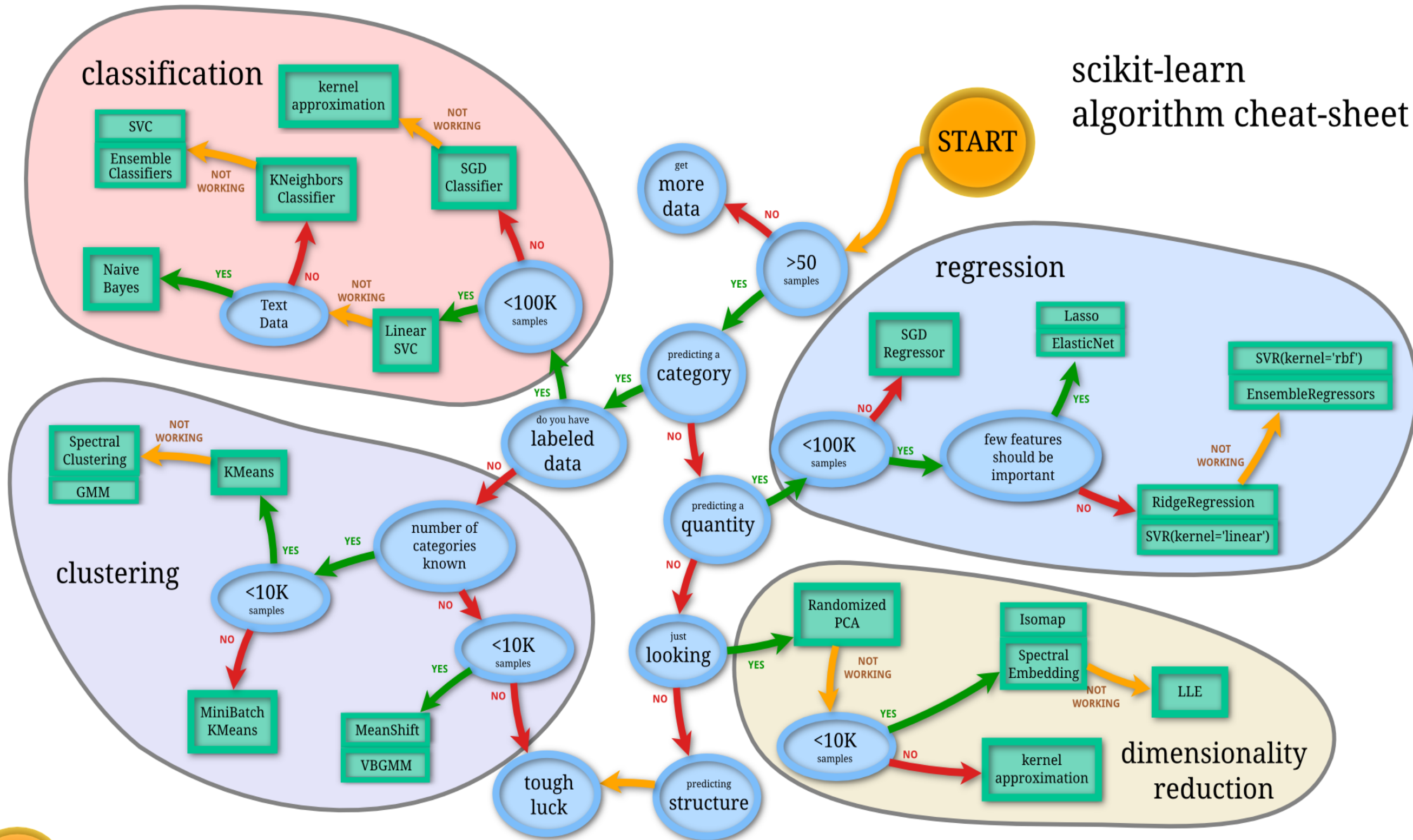


NumPy



matplotlib

scikit-learn algorithm cheat-sheet



Back

scikit
learn



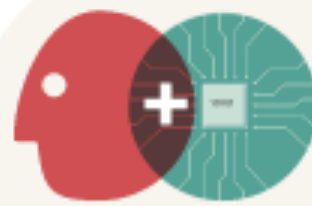
Keras



UNSTRUCTURED
BIG DATA



SYNTHESIZE
DATA



TRAIN THE
SYSTEM



DISCOVER
INSIGHTS



EVALUATE
FINDINGS



APPLY INSIGHTS