

| Use Case | Type/Family | Method |
|---|--|--|
| <ul style="list-style-type: none"> Lead generation Analyzing product sales drivers Classifying customers | <p>Regression is concerned with modeling the relationship between variables</p> | <ul style="list-style-type: none"> Linear Logistic |
| <ul style="list-style-type: none"> Fraud detection | <p>Instance-based learning model is a decision problem with instances or examples of training data that are deemed important or required to the model</p> | <ul style="list-style-type: none"> k-Nearest Neighbor (kNN) Support Vector Machines (SVM) |
| <ul style="list-style-type: none"> Identify customer segments Real-time prioritization and triage Classify products Clickstream analysis | <p>Decision tree methods construct a model of decisions made based on actual values of attributes in the data.</p> | <ul style="list-style-type: none"> Classification and Regression Tree (CART) Chi-squared Automatic Interaction Detection (CHAID) |
| <ul style="list-style-type: none"> Lead generation Synthetic data Process mining Analyzing sentiment based on reviews | <p>Bayesian methods are those that explicitly apply Bayes' Theorem for problems such as classification and regression.</p> | <ul style="list-style-type: none"> Naive Bayes Bayesian Network (BN) |
| <ul style="list-style-type: none"> Identify customer segments for targeted marketing CB Used to produce recommendations Machine learning used to parse through the email's subject line and categorize accordingly Process mining | <p>Clustering methods are typically organized by the modeling approaches such as centroid-based and hierarchal.</p> | <ul style="list-style-type: none"> k-Means Hierarchical Clustering Collaborative Filtering |
| <ul style="list-style-type: none"> Sales attribution Synthetic data Performance management | <p>Association rule learning methods extract rules that best explain observed relationships between variables in data.</p> | <ul style="list-style-type: none"> Apriori algorithm |
| <ul style="list-style-type: none"> Identify customer segments for targeted marketing Sales attribution Credit lending & scoring Performance management | <p>Artificial Neural Networks are models that are inspired by the structure and/or function of biological neural networks.</p> | <ul style="list-style-type: none"> Multilayer Perceptrons (MLP) |

| Use Case | Type/Family | Method |
|--|---|---|
| <ul style="list-style-type: none"> ▪ CNN ▪ Identify objects and categories in images. ▪ RNN ▪ Understand natural language for intelligent assistants ▪ Sales forecasting ▪ Voice ▪ Authentication ▪ Data ▪ Cleaning & validation platform ▪ Regulatory compliance ▪ Text mining and visual analysis components for RPA ▪ Predicting behavior | <p>Deep Learning methods are a modern update to Artificial Neural Networks that exploit abundant cheap computation.</p> | <ul style="list-style-type: none"> ▪ Convolutional Neural Network (CNN) ▪ Recurrent Neural Networks (RNNs) ▪ Long Short-Term Memory Networks (LSTMs) |
| <ul style="list-style-type: none"> ▪ Data pre-processing ▪ Email classification | <p>Like clustering methods, dimensionality reduction seek and exploit the inherent structure in the data, but in this case in an unsupervised manner or order to summarize or describe data using less information.</p> | <ul style="list-style-type: none"> ▪ Principal Component Analysis (PCA) |
| <ul style="list-style-type: none"> ▪ Classify transactions ▪ Call classification ▪ Real-time prioritization and triage | <p>Ensemble methods are models composed of multiple weaker models that are independently trained and whose predictions are combined in some way to make the overall prediction.</p> | <ul style="list-style-type: none"> ▪ Random Forest ▪ Boosting |
| <ul style="list-style-type: none"> ▪ Medical ▪ Imaging Insights | <p>Visual analysis</p> | <ul style="list-style-type: none"> ▪ Semantic Segmentation |
| <ul style="list-style-type: none"> ▪ Inventory management ▪ Text summarization ▪ Cognitive modeling | <p>Reinforcement learning seeks to develop self-sustained and self-learning algorithms that can improve themselves through a continuous cycle of trials and errors based on the combination and interactions between the labeled data and incoming data.</p> | <ul style="list-style-type: none"> ▪ Q-Learning ▪ Deep Adversarial Networks |