

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

Use Case	Type/Family	Method
<ul style="list-style-type: none"> <li>▪ CNN</li> <li>▪ Identify objects and categories in images.</li> <li>▪ RNN</li> <li>▪ Understand natural language for intelligent assistants</li> <li>▪ Sales forecasting</li> <li>▪ Voice</li> <li>▪ Authentication</li> <li>▪ Data</li> <li>▪ Cleaning &amp; validation platform</li> <li>▪ Regulatory compliance</li> <li>▪ Text mining and visual analysis components for RPA</li> <li>▪ Predicting behavior</li> </ul>	<p><b>Deep Learning</b> methods are a modern update to Artificial Neural Networks that exploit abundant cheap computation.</p>	<ul style="list-style-type: none"> <li>▪ Convolutional Neural Network (CNN)</li> <li>▪ Recurrent Neural Networks (RNNs)</li> <li>▪ Long Short-Term Memory Networks (LSTMs)</li> </ul>
<ul style="list-style-type: none"> <li>▪ Data pre-processing</li> <li>▪ Email classification</li> </ul>	<p>Like clustering methods, <b>dimensionality reduction</b> 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"> <li>▪ Principal Component Analysis (PCA)</li> </ul>
<ul style="list-style-type: none"> <li>▪ Classify transactions</li> <li>▪ Call classification</li> <li>▪ Real-time prioritization and triage</li> </ul>	<p><b>Ensemble</b> 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"> <li>▪ Random Forest</li> <li>▪ Boosting</li> </ul>
<ul style="list-style-type: none"> <li>▪ Medical</li> <li>▪ Imaging Insights</li> </ul>	<p><b>Visual</b> analysis</p>	<ul style="list-style-type: none"> <li>▪ Semantic Segmentation</li> </ul>
<ul style="list-style-type: none"> <li>▪ Inventory management</li> <li>▪ Text summarization</li> <li>▪ Cognitive modeling</li> </ul>	<p><b>Reinforcement</b> 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"> <li>▪ Q-Learning</li> <li>▪ Deep Adversarial Networks</li> </ul>