Machine learning encompasses a wide range of classification algorithms, and new ones are continually being developed. Update in September 2021:

1. \*\*Logistic Regression\*\*: A simple and widely used algorithm for binary and multiclass classification.

2. \*\*Decision Trees\*\*: Trees used to make decisions and classify data points.

3. \*\*Random Forest\*\*: An ensemble learning method based on decision trees.

4. \*\*Naive Bayes\*\*: Based on Bayes' theorem, suitable for text classification.

5. \*\*K-Nearest Neighbors (K-NN)\*\*: Classifies data points based on their proximity to other data points.

6. \*\*Support Vector Machines (SVM)\*\*: Finds the hyperplane that best separates data points.

7. \*\*Neural Networks\*\*: Deep learning models like feedforward and convolutional neural networks for image classification and natural language processing.

8. \*\*Gradient Boosting\*\*: Algorithms like AdaBoost, Gradient Boosting, and XGBoost that build an ensemble of decision trees.

9. \*\*K-Means Clustering\*\*: Although mainly a clustering algorithm, it can be used for anomaly detection.

10. \*\*Perceptron\*\*: A single-layer neural network used for binary classification.

11. \*\*LDA (Linear Discriminant Analysis)\*\*: Dimensionality reduction technique used for classification.

12. \*\*Quadratic Discriminant Analysis (QDA)\*\*: Like LDA but allows for different covariance matrices for each class.

13. \*\*Bayesian Networks\*\*: Probabilistic graphical models used for classification and probabilistic reasoning.

14. \*\*Hidden Markov Models (HMMs)\*\*: Used in sequential data analysis and speech recognition.

15. \*\*Decision Boundaries\*\*: Various algorithms for finding decision boundaries, such as the minimum enclosing ball algorithm.

16. \*\*Ensemble Methods\*\*: Methods that combine multiple classifiers, such as stacking and bagging.

17. \*\*Ridge and Lasso Regression\*\*: Linear regression techniques that can be used for classification.

18. \*\*Principal Component Analysis (PCA)\*\*: Dimensionality reduction technique used in conjunction with classifiers.

19. \*\*Extreme Learning Machine (ELM)\*\*: A type of neural network that can be used for classification.

20. \*\*Perceptron\*\*: A simple linear classifier.

21. \*\*Gaussian Mixture Models (GMMs)\*\*: Used for clustering and density estimation but can be applied to classification tasks.

22. \*\*Genetic Algorithms\*\*: Evolutionary algorithms that can be be used to optimize classification models.

23. \*\*SOM (Self-Organizing Maps)\*\*: A type of artificial neural network used for clustering and visualization.

24. \*\*Radial Basis Function (RBF) Networks\*\*: A type of neural network often used for classification.

25. \*\*Multi-layer Perceptrons\*\*: Neural networks with multiple layers used for deep learning.

26. \*\*Rough Sets\*\*: A mathematical framework for classification and decision making.

27. \*\*Fuzzy Logic Systems\*\*: A form of logic that deals with approximate reasoning, used in classification.

28. \*\*Conditional Random Fields (CRFs)\*\*: Used in sequence labeling and structured prediction tasks.

29. \*\*Extreme Gradient Boosting (XGBoost)\*\*: An optimized gradient boosting library.

30. \*\*LightGBM\*\*: Another gradient boosting framework for faster training.

31. \*\*CatBoost\*\*: A gradient boosting library for categorical feature support.

32. \*\*AutoML Approaches\*\*: Automated machine learning systems like AutoML, H2O.ai, and TPOT can automatically select and train classification models.

33. \*\*Hybrid Models\*\*: Combining multiple algorithms or techniques to create a hybrid classification system.