Model Card

Property	Decision Tree	Naive Bayes	K-Nearest Neighbour	Logistic Regression	Support Vector Machine (SVM)
1. Parametric/Non-parametric	Non-parametric	Parametric	Non-parametric	Parametric	Parametric (Linear SVM) / Non-parametric (Kernel SVM)
2. Input	Both continuous and discrete	Both continuous and discrete	Both continuous and discrete	Both continuous and discrete	Both continuous and discrete
3. Output	Discrete (classification) or continuous (regression)	Discrete (classification)	Discrete (classification) or continuous (regression)	Discrete (classification)	Discrete (classification)
4. Handle Missing Value	Yes, can handle through surrogate splits	No, needs preprocessing	No, needs preprocessing	No, needs preprocessing	No, needs preprocessing
5. Model Representation	Hierarchical tree structure with nodes and branches	Probabilistic model based on Bayes theorem	Instance-based model using distance metrics	Linear decision boundary	Linear or non-linear decision boundary with maximum margin
6. Model Parameters	Splitting criteria, max depth, min samples per leaf, etc.	Prior probabilities, conditional probabilities	Number of neighbors (k), distance metric	Coefficients (weights), regularization parameter	Kernel, regularization parameter (C), kernel parameters
7. Make the Model More Complex	Increase max depth, reduce min samples per leaf, reduce pruning	Use kernel density estimation instead of parametric distributions	Decrease k (fewer neighbors), use more complex distance metrics	Add polynomial features, reduce regularization	Use more complex kernels (polynomial, RBF)

8. Make the Model less Complex	Reduce max depth, increase min samples per leaf, increase pruning	Use simpler distribution assumptions	Increase k (more neighbors), use simpler distance metrics	Increase regularization (L1 or L2), feature selection	Increase C, use simpler kernels (linear)
9. Interpretability/Transparency	High interpretability (can visualize decision rules)	Moderate interpretability (can examine probabilities)	Low interpretability (black box)	High interpretability (can examine coefficients)	Low interpretability with non-linear kernels, moderate with linear kernel