

K-Fold Cross Validation Summary

Feature	K-Fold Cross Validation
Definition	A model validation technique that splits the dataset into k equal (or nearly equal) parts ("folds"). The model is trained k times, each time using $k - 1$ folds for training and the remaining fold for validation. The final performance metric is averaged over all k runs.
Purpose	To assess model generalization and reduce variance in performance estimates by using multiple train/validation splits.
Process	1. Shuffle the dataset. 2. Split into k folds. 3. For each fold: train on $k - 1$ folds, validate on the remaining fold. 4. Aggregate the results.
Output	An average performance metric (e.g., accuracy, RMSE) across all k folds, providing a more robust estimate of model performance.