

| Feature       | Bagging                   | Boosting                 | Stacking                   |
|---------------|---------------------------|--------------------------|----------------------------|
| Training      | Parallel                  | Sequential               | Hierarchical (base + meta) |
| Bias/Variance | Reduces variance          | Reduces bias             | Balances both              |
| Speed         | Fast (parallel)           | Slow (sequential)        | Slowest (2-phase training) |
| Overfitting   | Resistant                 | Prone (if noisy data)    | Prone (needs cross-val)    |
| Use Cases     | Noisy data, Random Forest | Imbalanced data, XGBoost | Competitions, hybrid tasks |

Accuracy:        Boosting > Stacking > Bagging

Speed:            Bagging > Boosting > Stacking

Robustness:      Bagging > Stacking > Boosting

Implementation: Bagging (easiest) → Boosting → Stacking (hardest)