

Model Performance Assessment

MODEL PERFORMANCE SUMMARY

Best Model: RandomForest

Overall Score: 42.7% (Within 15% tolerance)

DETAILED METRICS:

RandomForest:

- Test Accuracy ($\pm 15\%$): 42.7%
- Test Accuracy ($\pm 25\%$): 65.9%
- RMSE: \$11,670
- R^2 Score: 0.802
- Training Time: 3.6s

CatBoost:

- Test Accuracy ($\pm 15\%$): 42.5%
- Test Accuracy ($\pm 25\%$): 66.6%
- RMSE: \$11,999
- R^2 Score: 0.790
- Training Time: 101.6s

BUSINESS READINESS ASSESSMENT:

- Target: 60% within 15% tolerance
- Current: 42.7% within 15% tolerance
- Status: NEEDS IMPROVEMENT
- Risk Level: HIGH

RECOMMENDATIONS:

- Enhance feature engineering for usage patterns
- Implement ensemble methods
- Add domain-specific features
- Consider external data sources