

Model Performance Report: Random Forest

MODEL DETAILS:

- Algorithm: Random Forest
- Training Samples: 8155
- Test Samples: 2039
- Features: 12

PERFORMANCE METRICS:

- Root Mean Square Error (RMSE): 1.0632
- R^2 Score: 0.9791
- Mean Absolute Error (MAE): 0.6884
- Mean Square Error (MSE): 1.1304

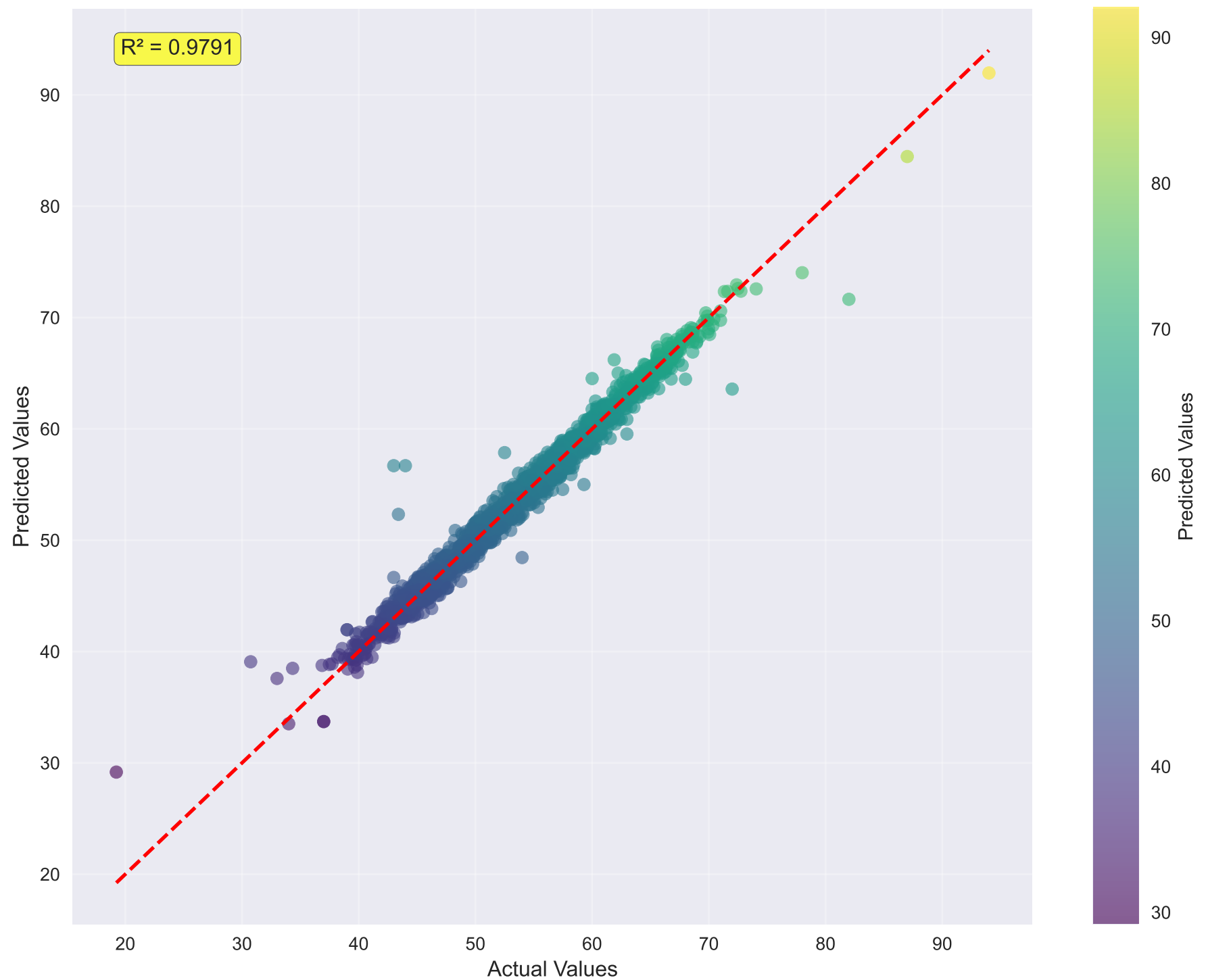
INTERPRETATION:

- R^2 Score of 0.9791 means the model explains 97.91% of the variance
- RMSE of 1.0632 indicates average prediction error
- Lower RMSE and MAE values indicate better model performance
- R^2 closer to 1.0 indicates better model fit

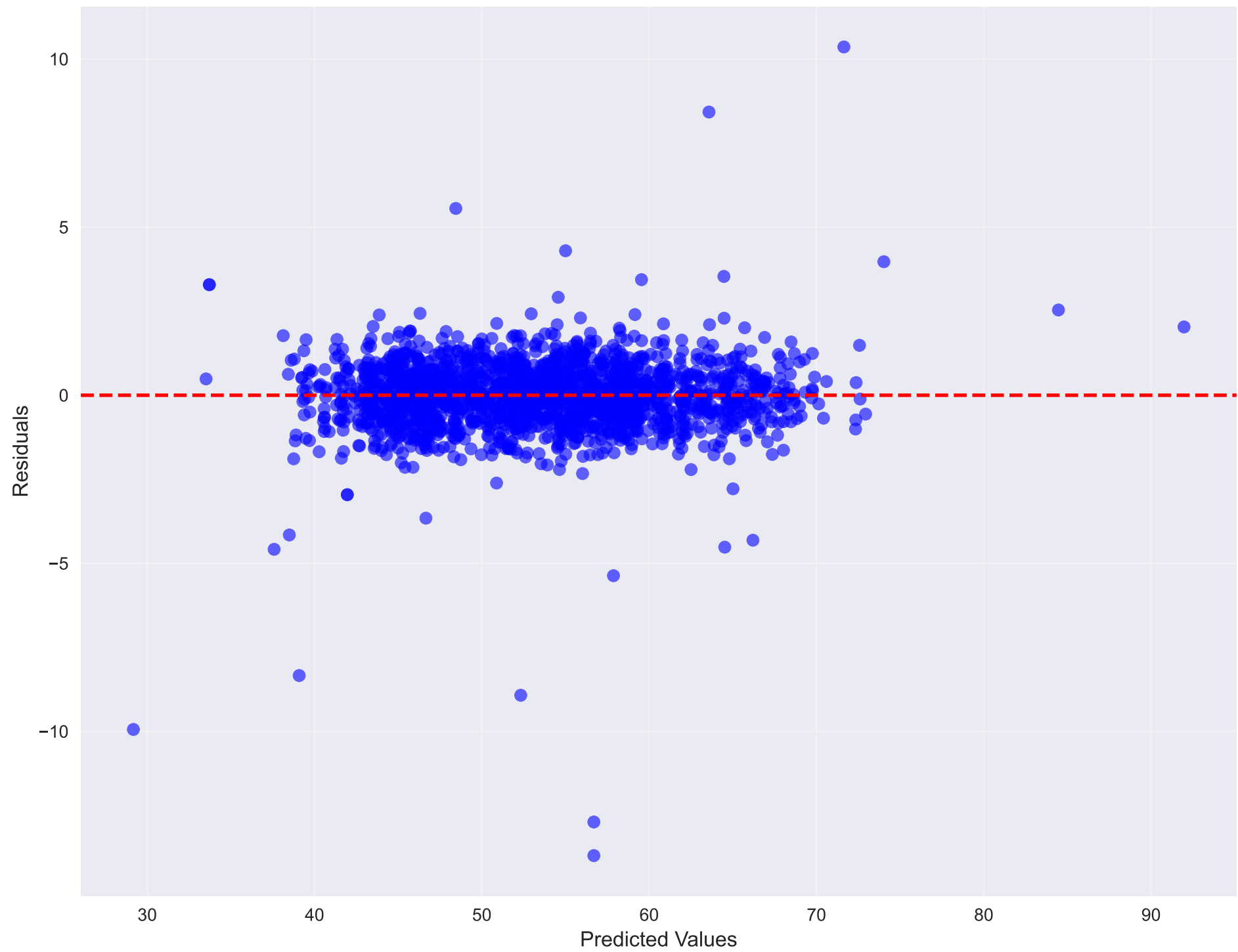
DATASET INFORMATION:

- Target Variable: Last Column
- Problem Type: Regression
- Cross-validation: 3-fold GridSearchCV used for hyperparameter tuning

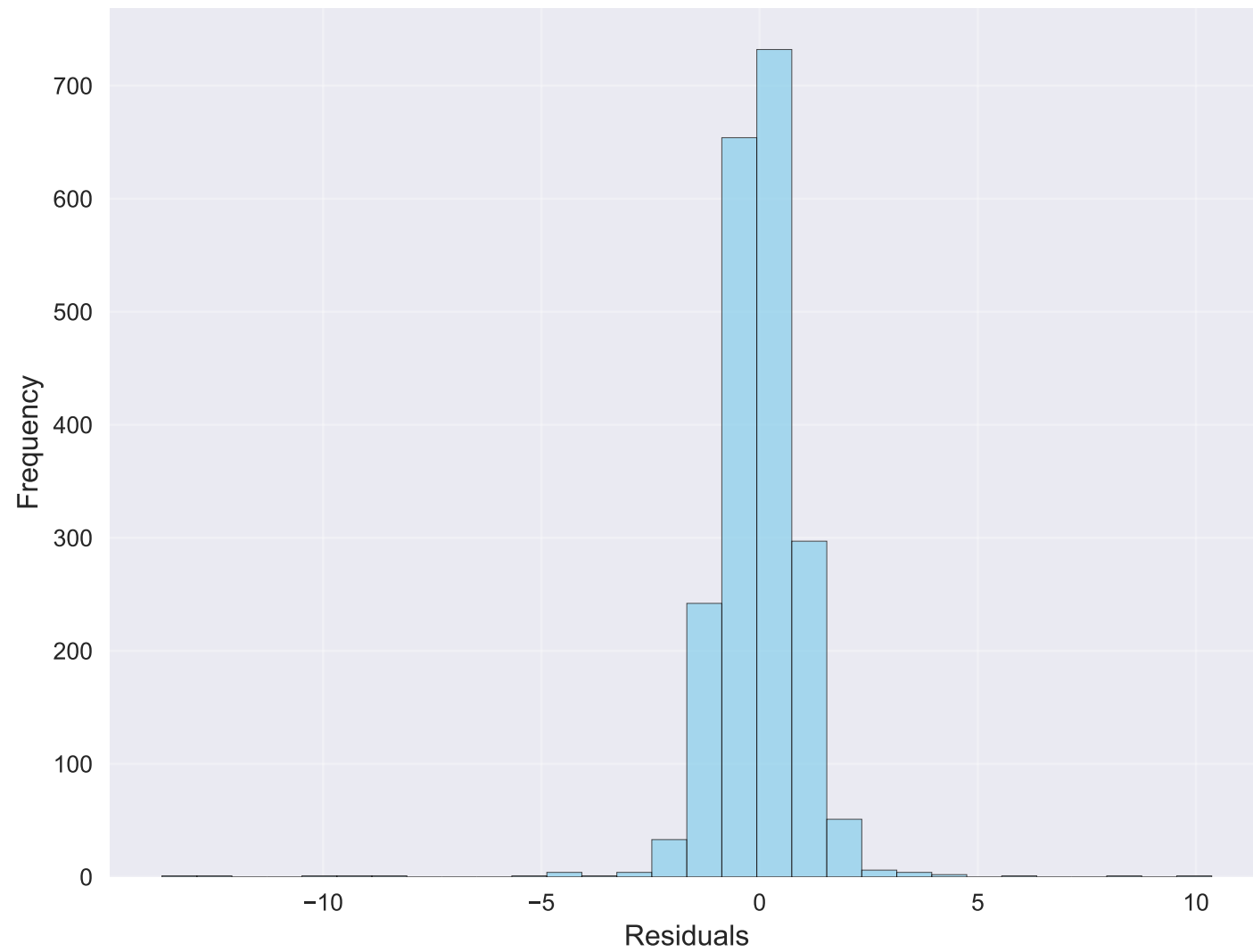
Random Forest: Actual vs Predicted Values



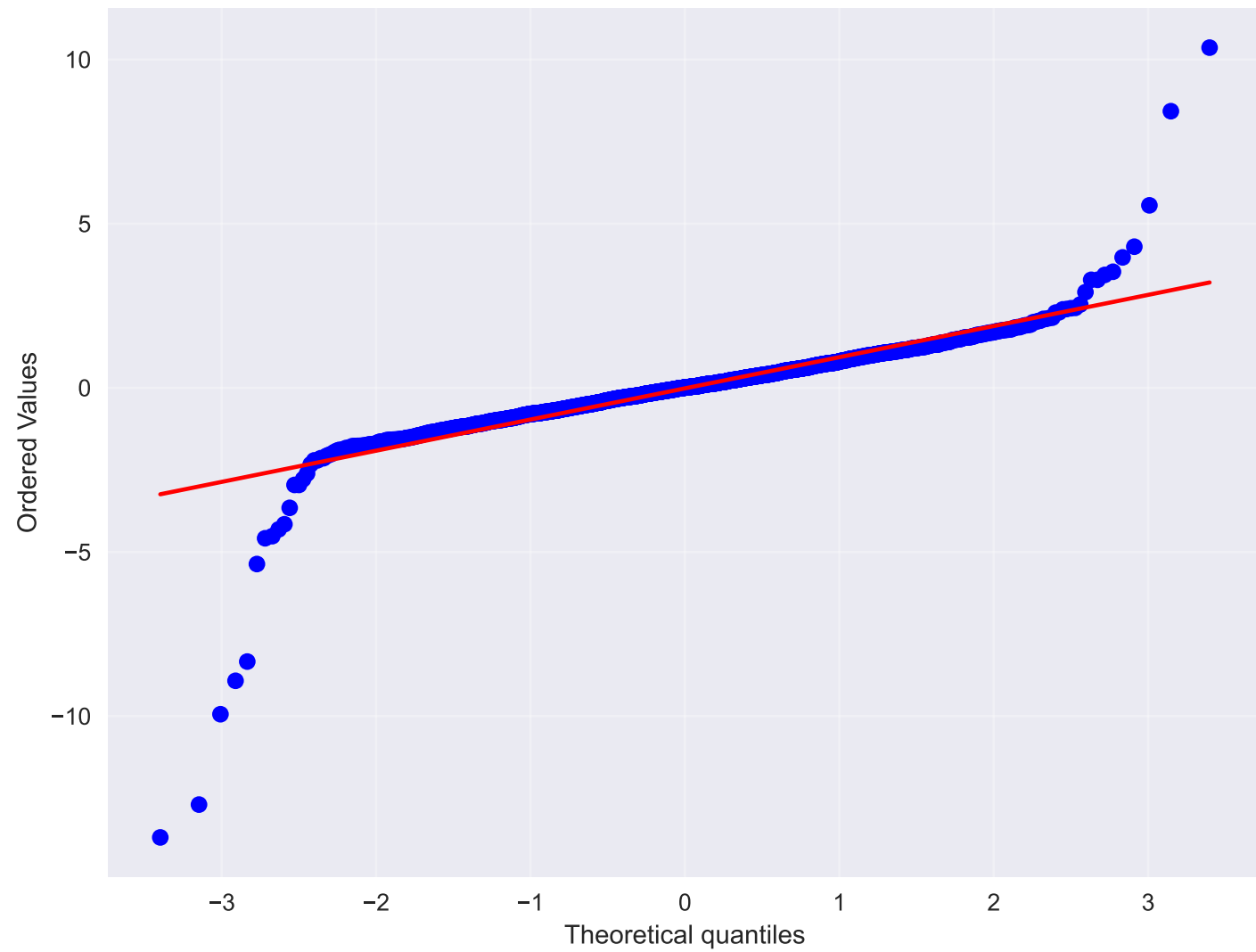
Random Forest: Residual Plot



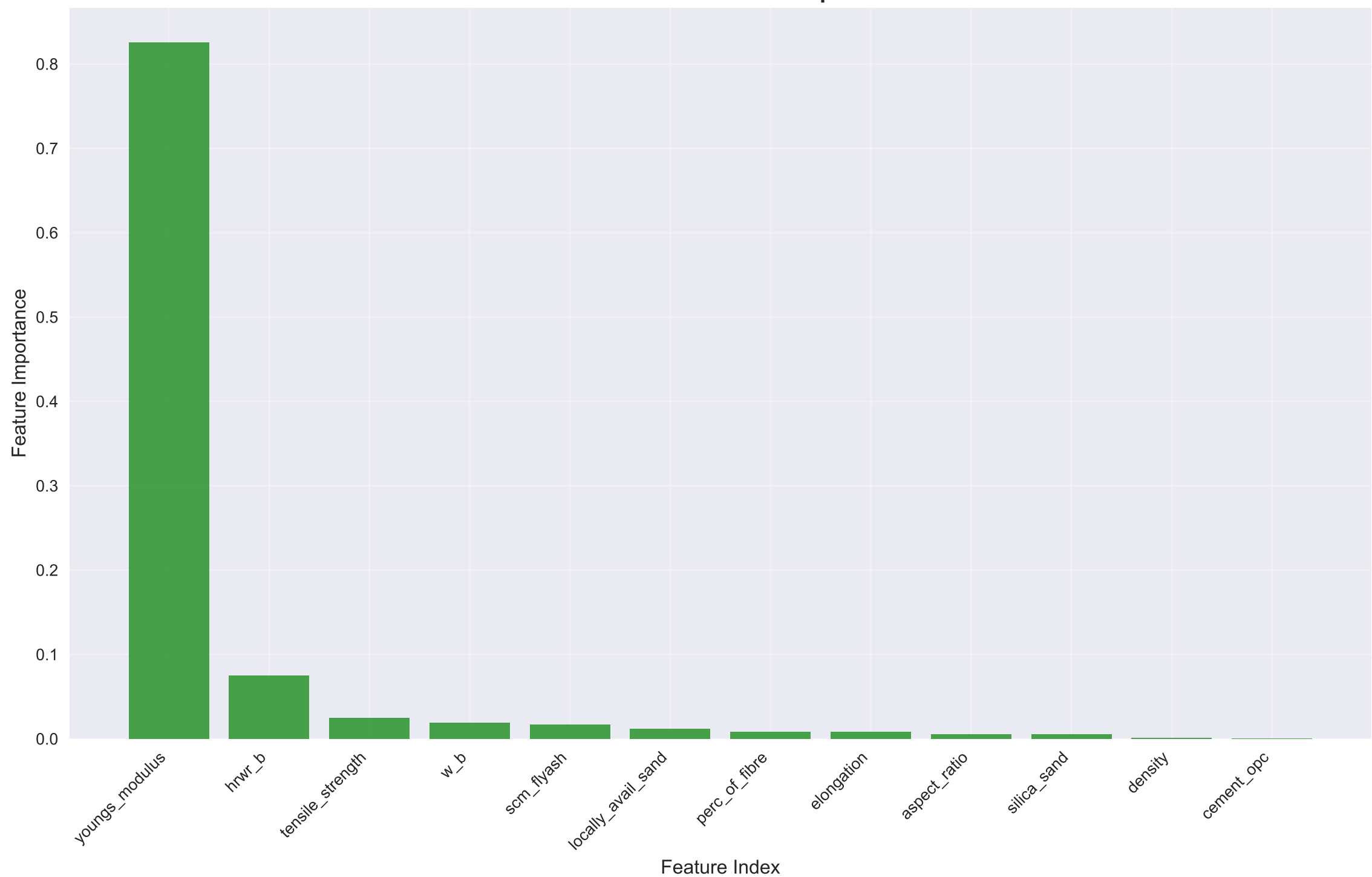
Distribution of Residuals



Q-Q Plot of Residuals



Random Forest: Feature Importance



Random Forest: Performance Metrics Summary

