Responsible Grade Prediction: Ten-Task Capstone

Complete using the official UCI file only after lawfully obtaining it. Do not deploy on real students.

1. Define question and stage

Target G3; reduced historical features with documented timestamp uncertainty

2. Verify source

Cortez 2008, UCI #320, 395 mathematics rows, 0–20 scale

3. Inspect data

Check structure, semicolon delimiter, missingness and ranges

4. Select features

Exclude target and unavailable future grades

5. Split data

Preserve 20% test; use CV on training

6. Build baseline

DummyRegressor mean of training G3 only

7. Build candidates

Ridge and Random Forest with preprocessing Pipelines

8. Validate candidates

Five-fold CV MAE on the same training folds

9. Evaluate once

Baseline vs selected model MAE, RMSE, R^2 plus residual plots

10. Report responsibly

Provenance, limits, privacy, fairness, uncertainty and nondeployment