

# Homework #5

- Data: same as Homework #4
- Tasks
  - Task1: use RF for predicting 'Tread\_Type', 'DW' and 'DG'
    - fit 3 independent RFs (1 RF for each label)
      - RandomForestClassifier for 'Tread\_Type'
      - RandomForestRegressor for 'DW', 'DG'
    - fill in "Submission\_TT,DW,DG.xlsx"
    - submit with filename = f"Task1\_{your student id}.xlsx"
  - Task2: use "multi-output" RF for predicting 'DW' and 'DG'
    - fit 1 RF for 'DW' and 'DG'
      - for this, use df[['DW', 'DG']] as your label when fitting RandomForestRegressor
    - fill in "Submission\_TT,DW,DG.xlsx"
      - For TT, use the result of Task1
    - submit with filename = f"Task2\_{your student id}.xlsx"
  - Task3: use Gradient Boosting Tree for predicting 'Tread\_Type', 'DW' and 'DG'
    - use XGBoost or its variants (CatBoost, LightGBM, ...)
    - fit 3 independent models (1 model for each label)
    - fill in "Submission\_TT,DW,DG.xlsx"
    - submit with filename = f"Task1\_{your student id}.xlsx"