

CrossValidationPanelData

- Autocorrelation issues: assumption of i.i.d. observations won't hold over time
- The CV methods presented will ignore the sequential nature of time

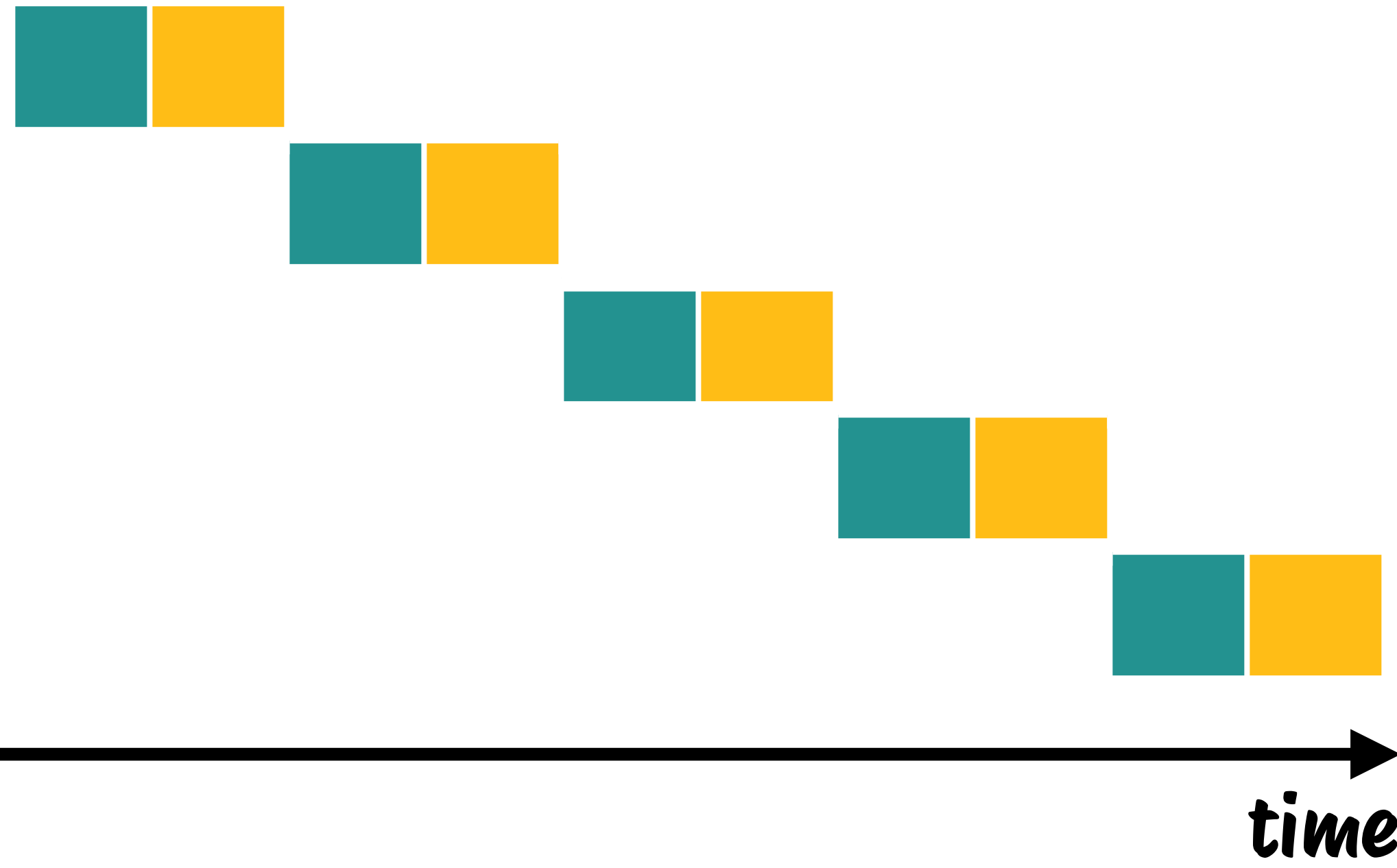


Nested Cross Validation

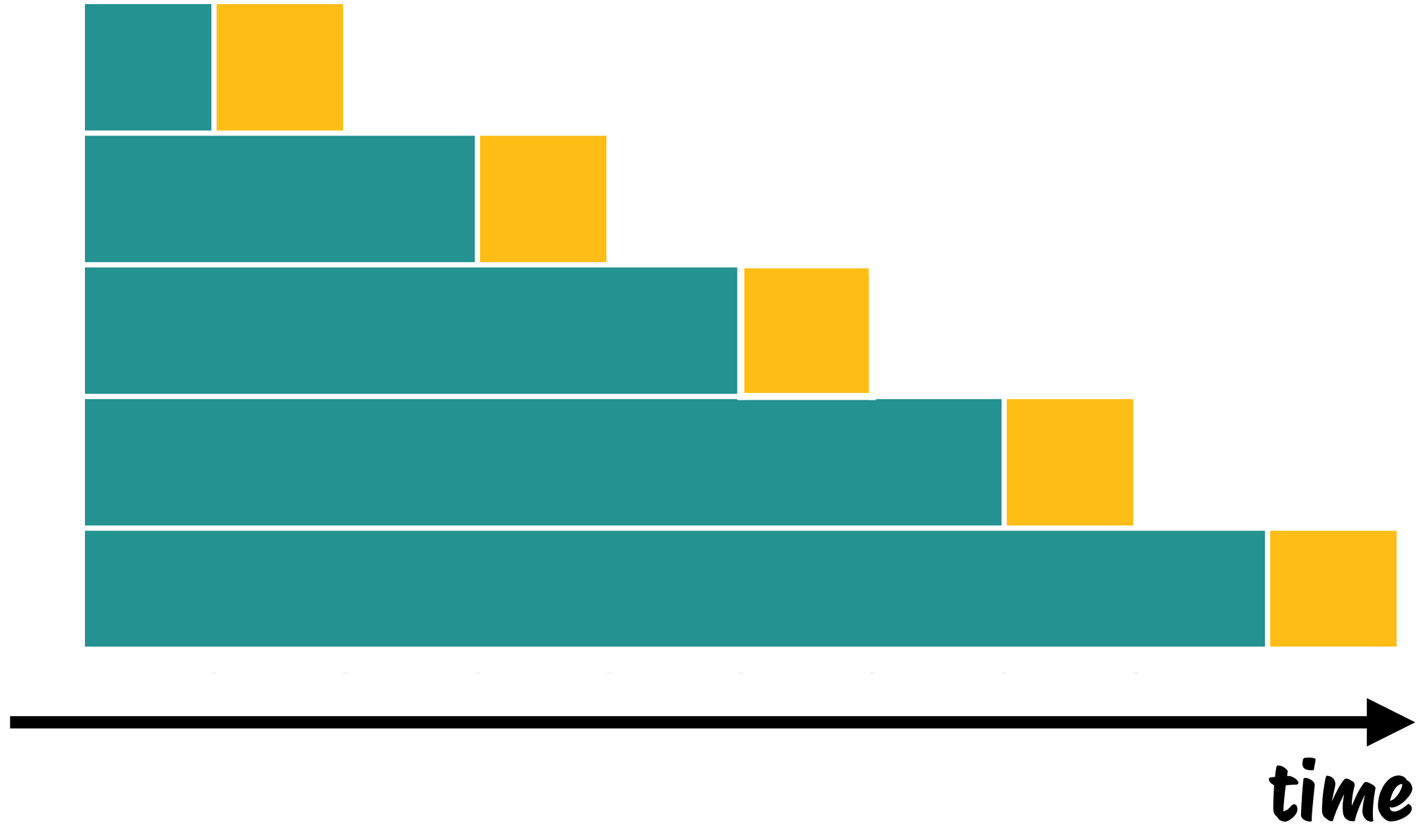
 **train**
 **test**

data

sliding time window



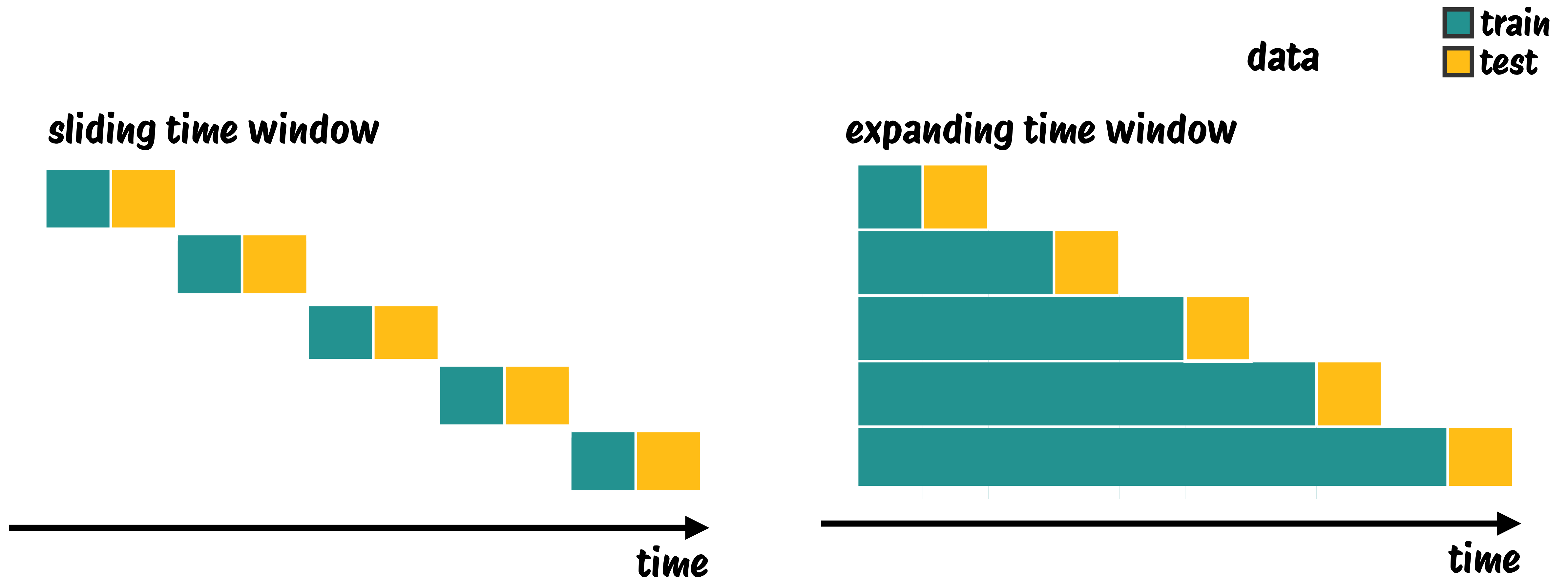
expanding time window



Cross Validation and Panel Data

- Autocorrelation issues: assumption of i.i.d. observations won't hold over time
- The CV methods presented will ignore the sequential nature of time

⇒ **Nested Cross Validation**



Today's Example I: Iris Data

- Data: 50 flowers in 3 different species and 4 different attributes
- Use some useful packages such as care (Classification And Regression Training)
- Apply linear model and use following performance metrics: R^2 , $RMSE$, MAE
- Validation approaches:
 - Validation set approach
 - LOOCV
 - K-fold CV
 - Repeated K-fold CV

