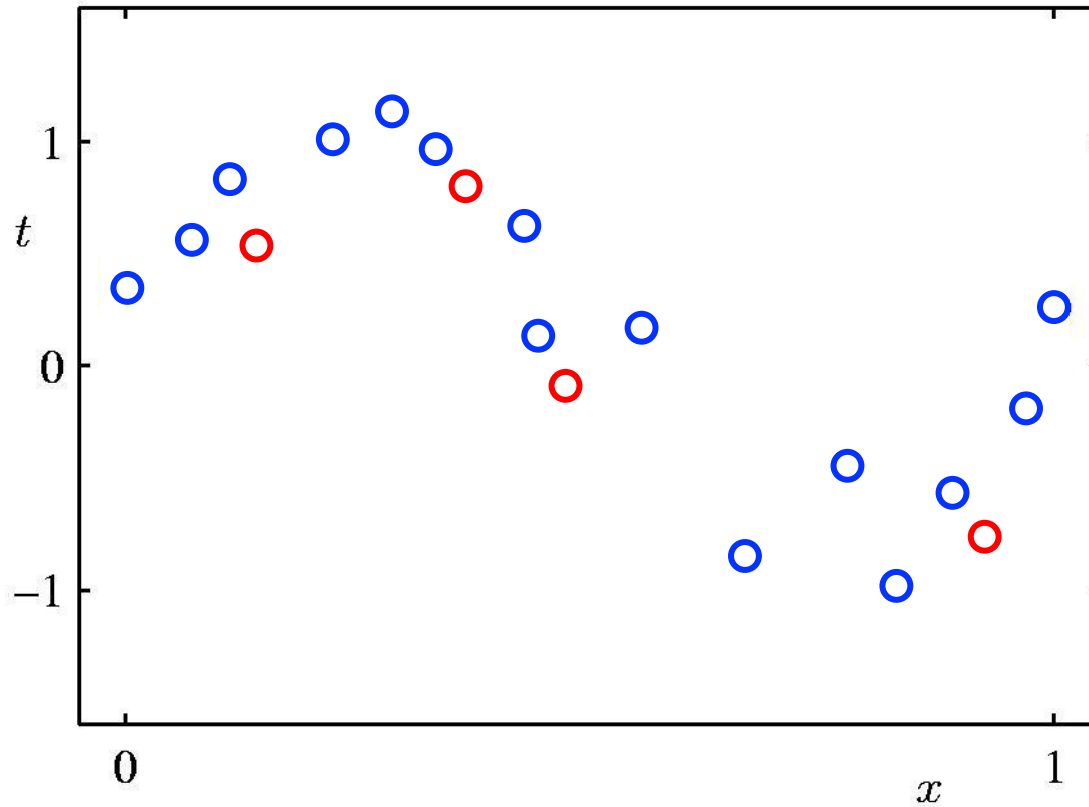


Artificial Intelligence (EI06024001)

# Train & Test Data

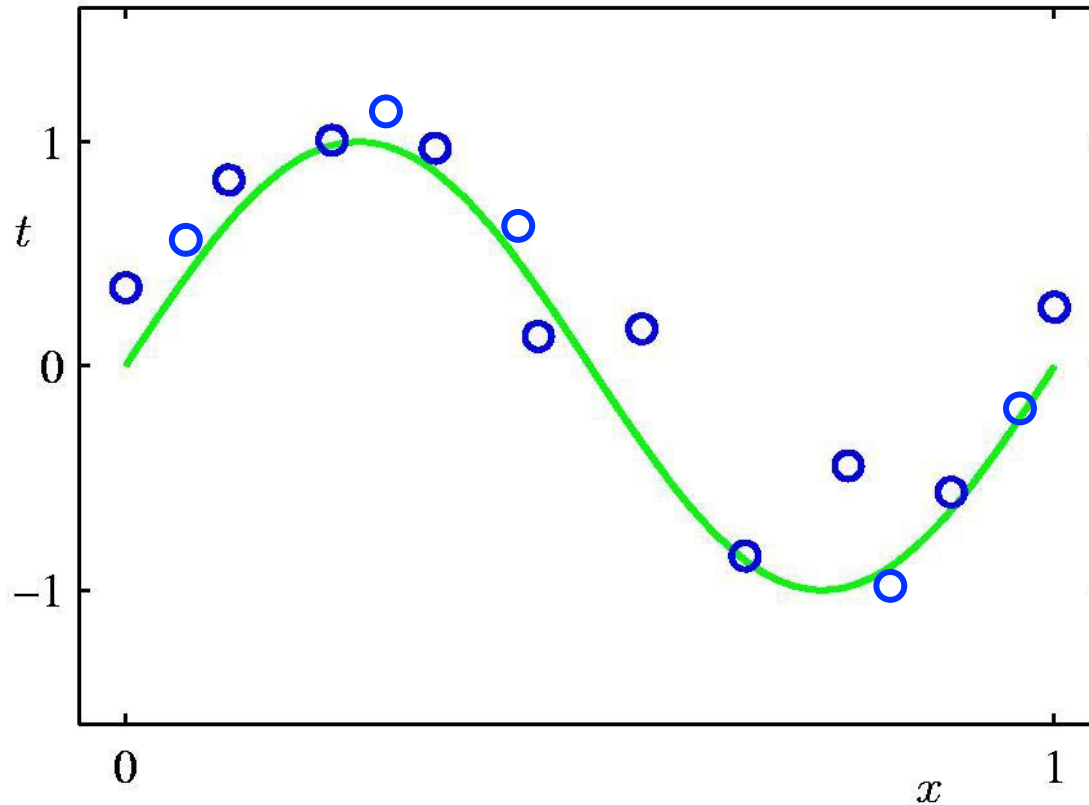
# Reminder: Polynomial Curve Fitting Problem



○ : Train data

○ : Test data

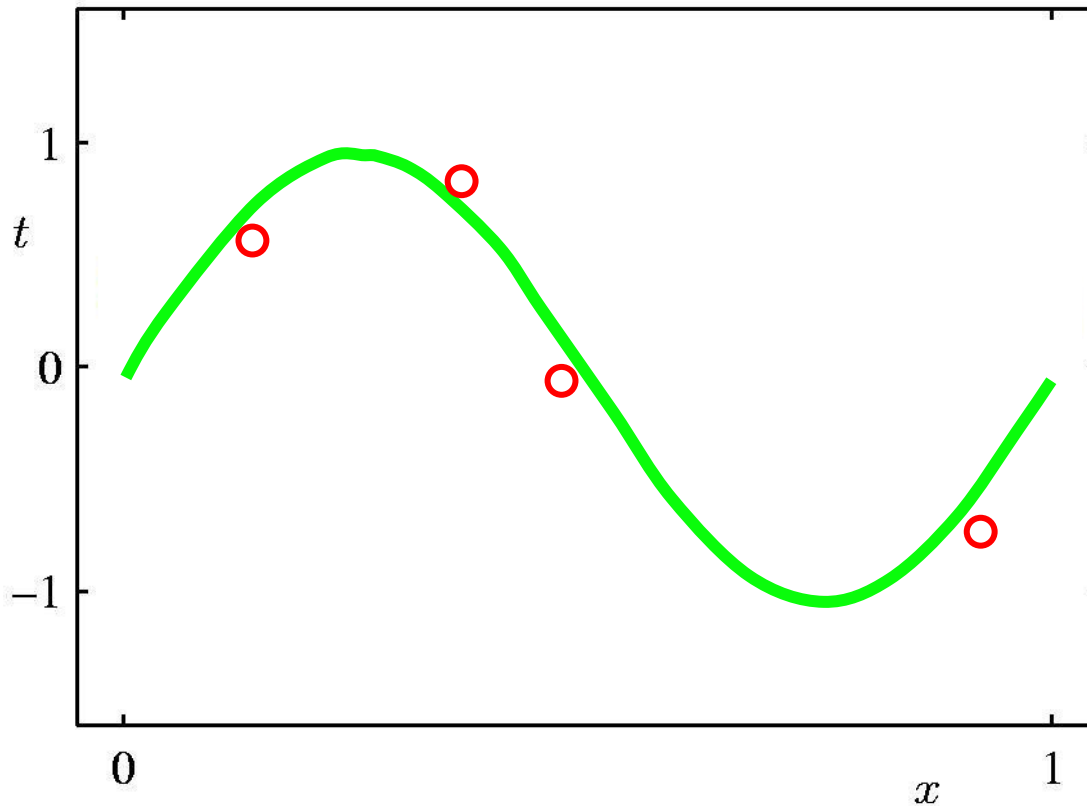
# Reminder: Polynomial Curve Fitting Problem



Find function  $f(-)$  from data ( $\circ$ )

By decreasing (sum-of-square) loss.

# Reminder: Polynomial Curve Fitting Problem

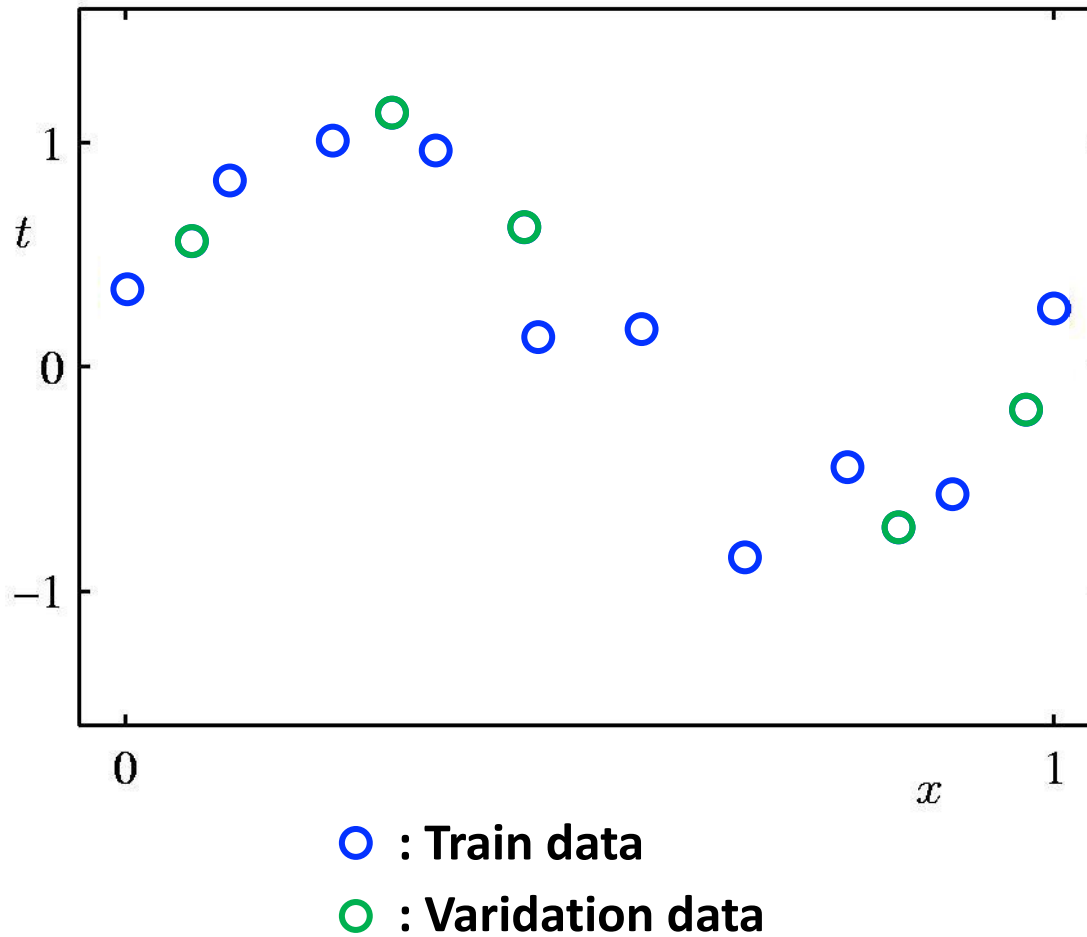


If training is done properly, the loss will be small even for the test data(○).

Train-loss ( $\downarrow$ ) → Test-loss ( $\downarrow$ )

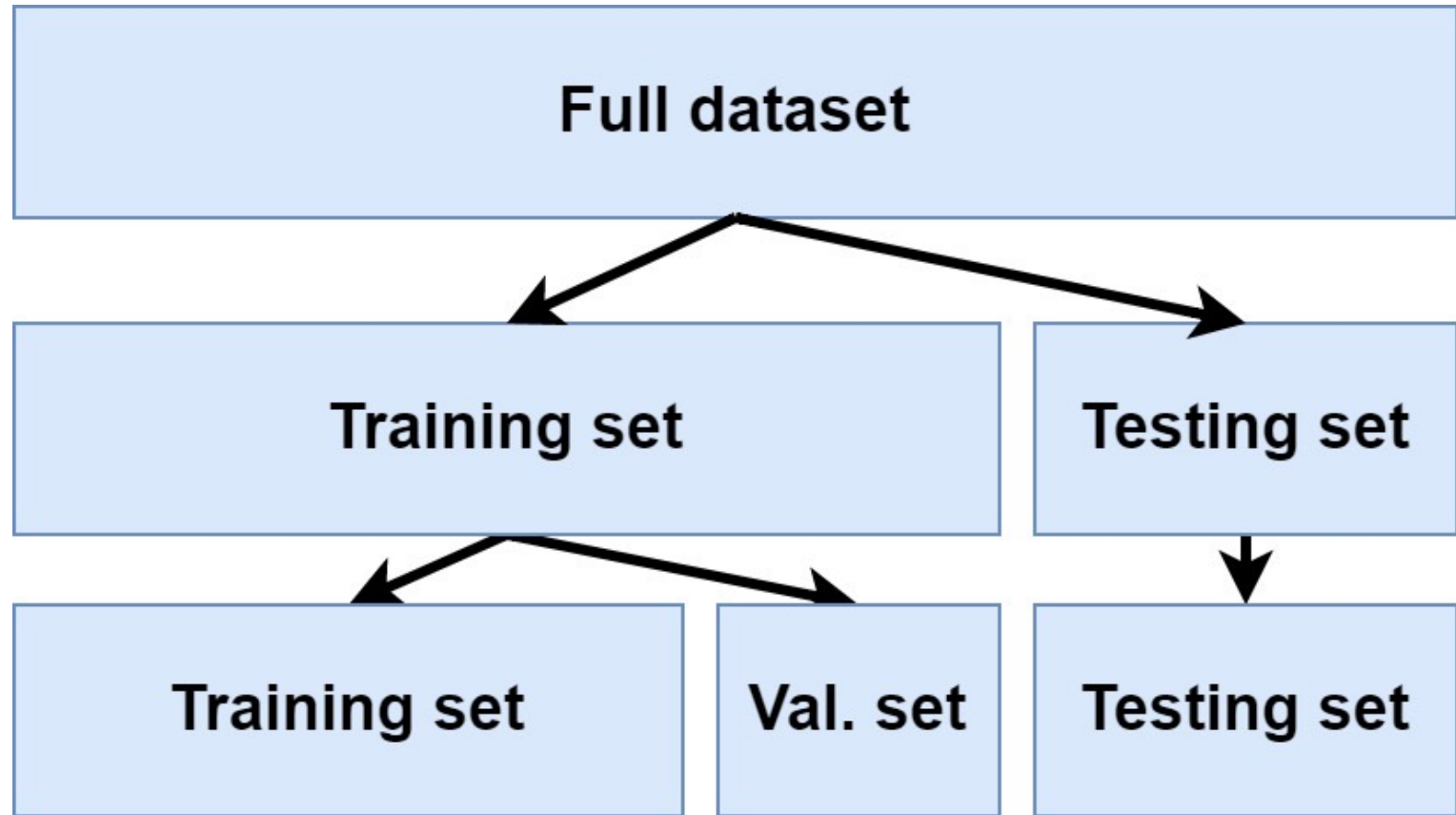
The problem is we do not know the test data during training phase!

# Use Validation Data



The role of validation data is to determine whether learning is successful.

# Use Validation Data



# K-Fold Cross-Validation

