Video 19 Summary

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1 List of Important Steps for Linear Models

The followings steps are very important for using any kind of Linear Model :-

- **DRAW THE BLACKBOX**

  First of all draw a blackbox which gives some idea of the system under study and the inputs and outputs .

- **MAKE n SETS OF MEASUREMENTS**

  Make 'n' number of measurements involving all inputs and outputs related to the system .

- **CREATE A *CSV* FILE**

  Now create a CSV file with 'n' rows (corresponding to 'n' measurements) and the inputs and output as columns .

- **LOAD THE FILE INTO R**

  Use the command *data=read.csv("your csv file")*) to load the created csv file into R ! (eg. file name)

- **CHECK SANITY** Now just give a check of the things done till now (eg. the file name , no. of rows and columns in the File , observe a first few observations and so on ...)

- **PLOT AND EXPLORE**]

  Draw scatterplots / whiskerplots and others to analyse and explore the dataset .

- **CARRYING OUT THE FIT**

  Use the command *fit=lm(out* $\approx$ *..... , data)* to create the Linear Model. The ..... depends on which Model we will fit (eg. for Linear Regression just write the name of the inputs)

- **EXPLORING THE FIT**

  Once the Model is fit , explore it like look at the estimated coefficients , residuals , fitted values and others .

- **ASSESS GOODNESS**

  Finally , assess the fitted Model by comparing the Fitted Values with the actual Outputs (by scatterplots and so on) . If the fit does not seem good , then we can tweak the parameters in the earlier command and keep on repeating the 3 former steps till we get a good fit by our standards !