

# Lecture 11 : Understanding Experimental Data

1. Why do we build models ?  
A good model helps us to:

- 1) Understand the process that generated the data
- 2) Help us make predictions about out-of-sample data

We want the model to work well on other data generated by the same process.

2. Cross - Validation  
a good way to test the generalizability of our model.

3. The noise is the reason of overfitting.  
If extra term is useless, its coefficient will merely be zero.

But if data is noisy, can fit the noise rather than the underlying pattern in the data.