Statistical Learning

we will only be able to learn if there is something we can learn

- Output Y has something to do with input X

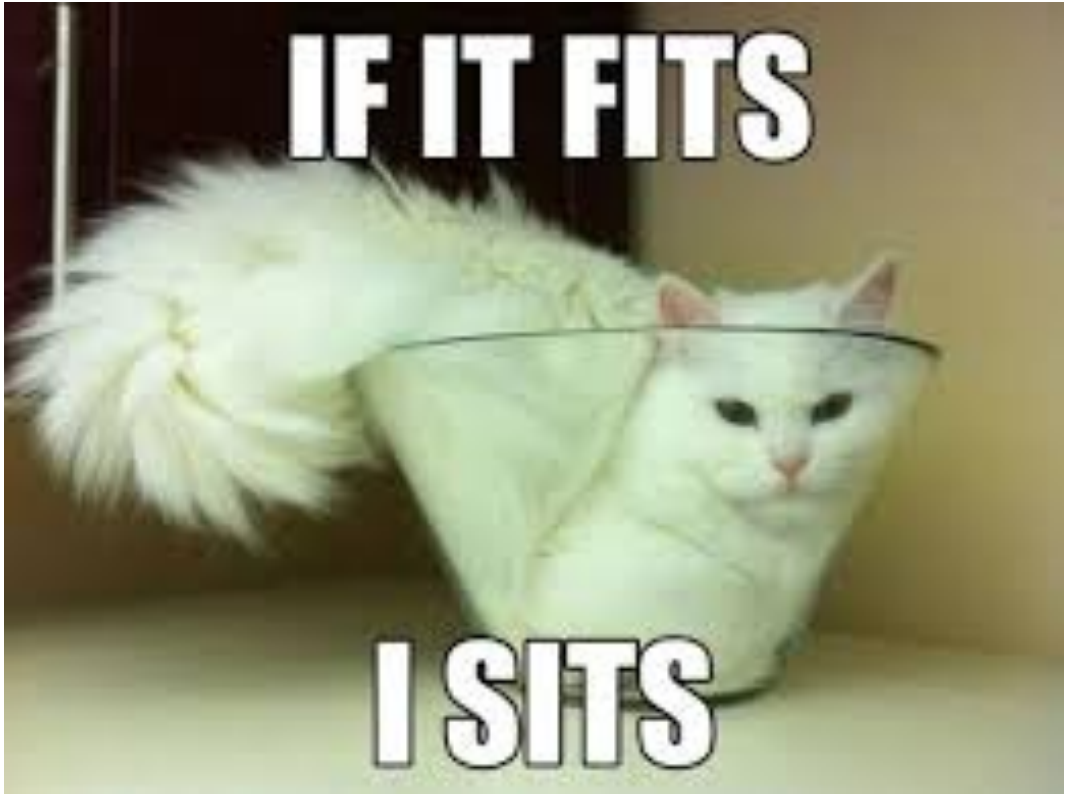
- “Similar inputs” lead to “similar outputs”

- There is a “simple relationship”/“simple rule” to generate output for a given input

we need a prior idea what we are looking for

→ **inductive bias** (learning impossible without such a bias)

- think of linear regression, what is the inductive bias here?


IF IT FITS
I SITS

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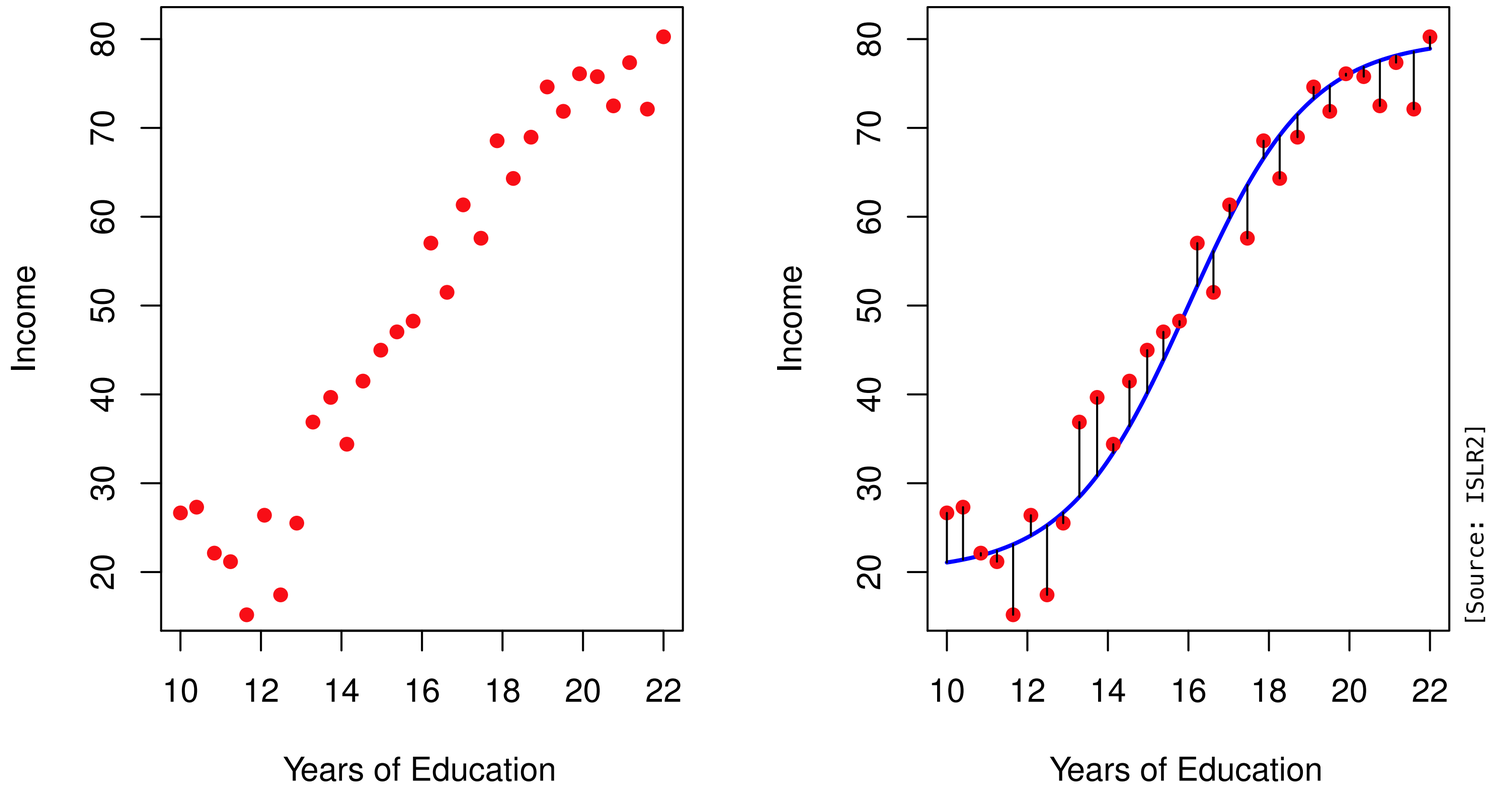
The Fundamental Problem



$$Y = f(X) + noise$$