**1. Model Selection**

Whose(which) model rank supreme?

**2. Introduction to Machine Learning 2**  
 One problem, two stages of optimization

**3. R: Matrixs**

Neo is the fifth one … Fifth one in what?

**4. Linear Regression 2**

Solved using matrix algebra

**5. R: Functions**

Here is my card or here is my function…

1st up, review four basic data types: character, numerical, logical, factor real quick and mention no matter how long they are, they are all 1-D vectors. 5min

2nd create a dataframe, talk about change row/column names, and why we should avoid names like “River/Creek”. 5min

3rd talk about the machine learning diagram version 1, and how a linear regression fit in the description of the diagram, live demo of the process to show write R script rather than only interact with console. 10m

4th compare models created for the housing problem, suggest that the model selection work is also an optimization problem. 5m

5th The difference among statistical modeling, OR modeling, and machine learning, and what analytics really means to me. 10m

6th Introducing valdation set and revise the machine learning diagram to version 2, 5m

7th Matrix. 15m

8th Normal equation solution to linear regression. 5m

9th Function and why write functions(or I preferred Fortran name for function: sub routine). 5m