IE4211
Intro to Analytics and Modeling
github.com/securespider

01. Intro
Mathematical Modeling
- Transforms problems into math for analysis to provide insights
- Building model creatively but choosing model analytically

Analytics
- Use **data** to build model and add value
- Data $\rightarrow$ Prediction $\rightarrow$ Decision

Descriptive "Wht has happened"
- Classification, unsupervised learning

Predictive "Wht could happen"
- Linear/Logistic regression, k-means clustering

Prescriptive "Wht to do"
- Linear and Integer programming

Newsvendor Problem
Problem statement
- Newsvendor sells newspaper everyday
- Vendor buy at \$.5 of y quantity
- Vendor sells min(D_{demand}, y) newspaper @ \$2

Optimal solution
Overage Buying more papers than demand

Underage Buying less paper than demand