Auto-Regularization Regression Presentation

Presentation Outline

1. Introduction
   1. About self
   2. Outline
2. Recap on Linear Regression
   1. Sum of Square Error
   2. Derivative
   3. Dataset splitting – training/testing
3. Recap on L2 regularization
   1. Add-on to SSE
   2. Lambda
   3. Current methods of learning Lambda – grid search
4. Learning Lambda
   1. Basic concept
      1. Second-layer error formula
      2. Deriving from derivatives
   2. Learning rate
   3. Final formula
5. Results
   1. Using model error on training, validation and test
   2. Common types of results
   3. Interpretation of results
   4. Use cases for auto-reg
6. Future work
   1. Generalize to logistic?
      1. Or any other loss function?
   2. Tailor L2 by weight?
      1. Bias/variance tradeoff – overfitting?
   3. Works in neural nets?
   4. Application to L1?
      1. The ultimate feature selector!
7. Q&A