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January 28, 2020

1 Week 1

- Plan
  - Motivate Machine Learning
  - Introduce notation used throughout course
  - Plan for initial lectures
    * *What*: Introduce, motivate a model
    * *How*: How to use a model: function signature, code (API)
    * *Why*: Mathematical basis – enhance understanding and ability to improve results
- Course Overview
- Getting Started
- Machine Learning: Overview
- Intro to Classical ML

2 Week 2

- Plan

  - Introduce a model for the Regression task: Linear Regression
  - Introduce the Recipe for Machine Learning: detailed steps to problem solving

- Our first model: Linear Regression (Overview)

- Recipe for Machine Learning: Overview

  - Linked notebook

- Linear Regression: Loss Function

- Deeper dives

  - Prepare Data: deeper dive
    * Fitting a transformation on training data
    * Applying to training, validation, test
  - Iterative improvement
    * Improvement by adding features
    * [When to stop] (Bias_and_Variance.ipynb)
      · Regularization
  - Transformation pipelines
  - Fine tuning