Online Machine Learning Lecture

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- **Week 1: Overview of Machine Learning**
  - Part 1: Data And Terms
    - Lecture introdution.
    - What Is Machine Learning?
    - Why Eestinate f?
    - Types of Learning.
    - Data Types And Datasets.
    - Model Performance.
  - Part 2: Regression Models and Linear Regression
    - What is Linear Regression problem?
    - Defining loss function.
    - Interpretation of loss function and estimating parameters.
    - Finding minima with gradient descent algorithm.
  - Part 3: Regression Models and Logistic Regression
    - Decision theory.
    - What is Linear Regression problem?
    - Defining loss function.
    - Interpretation of loss function and estimating parameters.
- **Week 2: Model's Performance**
  - Part 1: Train - Validate - Test
    - Why we need to evaluate the model?
    - Splitting the dataset.
    - Definitions of datasets.
  - Part 2: Evaluating Regression Models.
    - Evaluating Linear Regression.
    - Evaluating Logistic Regression: Misclassification Error.
    - Evaluating Logistic Regression: Confusion Matrix.
  - Part 3: The Problem of Overfitting
    - Bias - Variance Trade off.
    - Hyperparameters.
    - Homework 1.

- **Week 3: Introduction To Deep Learning**