TAMS ARTIFICIAL INTELLIGENCE SOCIETY
2021 - 2022

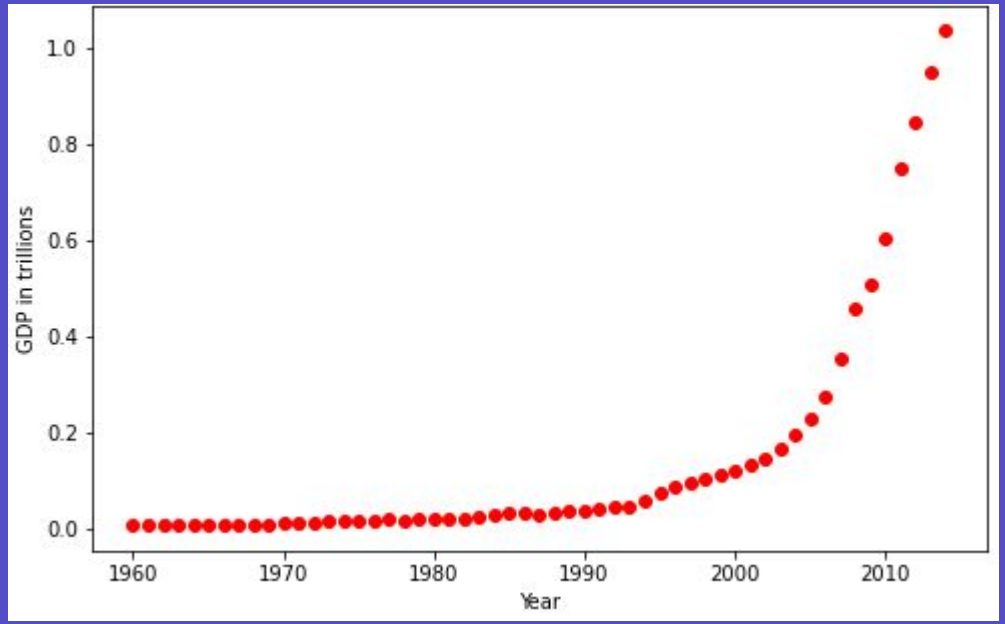
Nonlinear Regression

9/22/21

Lesson Plan

- Polynomial Regression
- Polynomial Regression with Single Feature

Polynomial Regression



- A linear model is not a good fit for this data
- Polynomial features are used instead
- Relationship between features and labels can be nonlinear

Polynomial Regression with Single Feature

$$h_\theta(x) = \theta_0 + \theta_1 x_1 + \theta_2 x_1^2 \cdots \theta_n x_1^n$$

1. Choose an appropriate polynomial degree n
2. Create new features with x_1 raised to the power of 2 to n
3. Perform linear regression with these features