Regression vs Classification

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Regression vs. classification

A **regression** model predicts continuous values. For example, regressio
predictions that answer questions like the following:

- What is the value of a house in California?
- What is the probability that a user will click on this ad?

A **classification** model predicts discrete values. For example, classifica
make predictions that answer questions like the following:

- Is a given email message spam or not spam?
- Is this an image of a dog, a cat, or a hamster?

Key Characteristics of Classification Problems:

1. **Discrete Output**: The output variable or target variable is categorical in nature
continuous.
2. **Predefined Classes**: The classes or categories into which the data points are to
known and fixed before training the model.
3. **Training with Labeled Data**: The algorithm learns from a dataset where each d
accompanied by a label indicating its class.

Example Scenarios:

- **Email Spam Detection**: Classify incoming emails as "spam" or "not spam" base
and characteristics.
- **Medical Diagnosis**: Predict whether a patient has a particular disease based o
results, and patient characteristics.
- **Handwriting Recognition**: Identify handwritten digits (0-9) based on scanned

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Handwriting Recognition: Identify handwritten digits (0-9) based on scanned handwritten characters.