

Implementing Predictive Analytics with TensorFlow

IMPLEMENTING SUPERVISED LEARNING SYSTEMS



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Module Overview



Understand supervised learning systems

Introduce linear regression

Implement a linear regression system

Introduce neural networks

Implement a neural network system



Understanding Supervised Learning



Supervised vs. Unsupervised Learning

Supervised Learning

Input data has known outputs

Model is trained from known data

Unknown outputs can then be predicted
from the trained Model

Unsupervised Learning

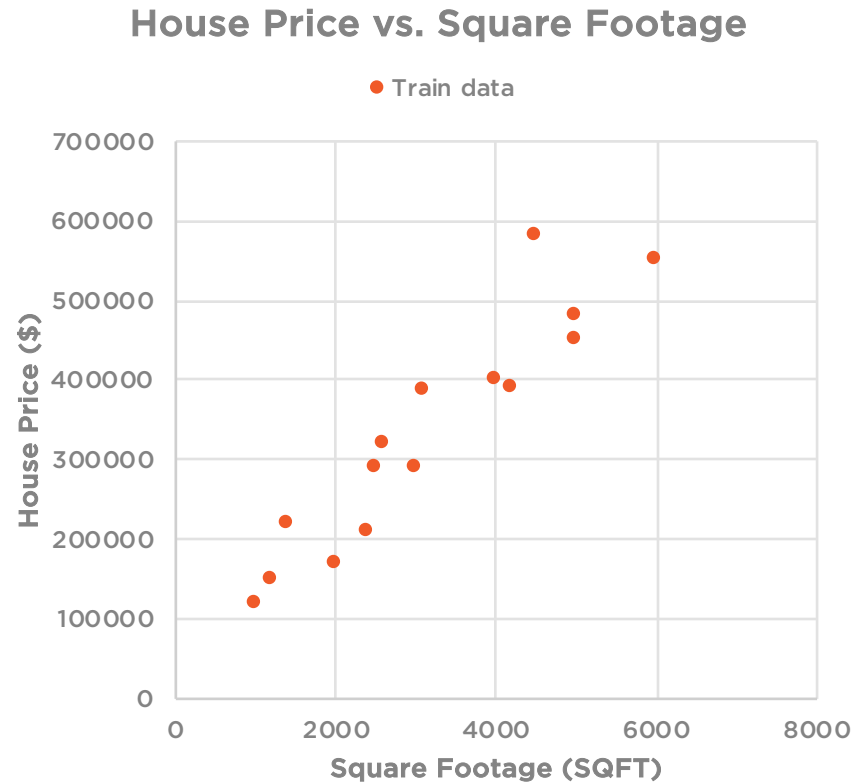
Input data has unknown outputs

Model identifies commonalities in data

Model can react to patterns or
structures within the data



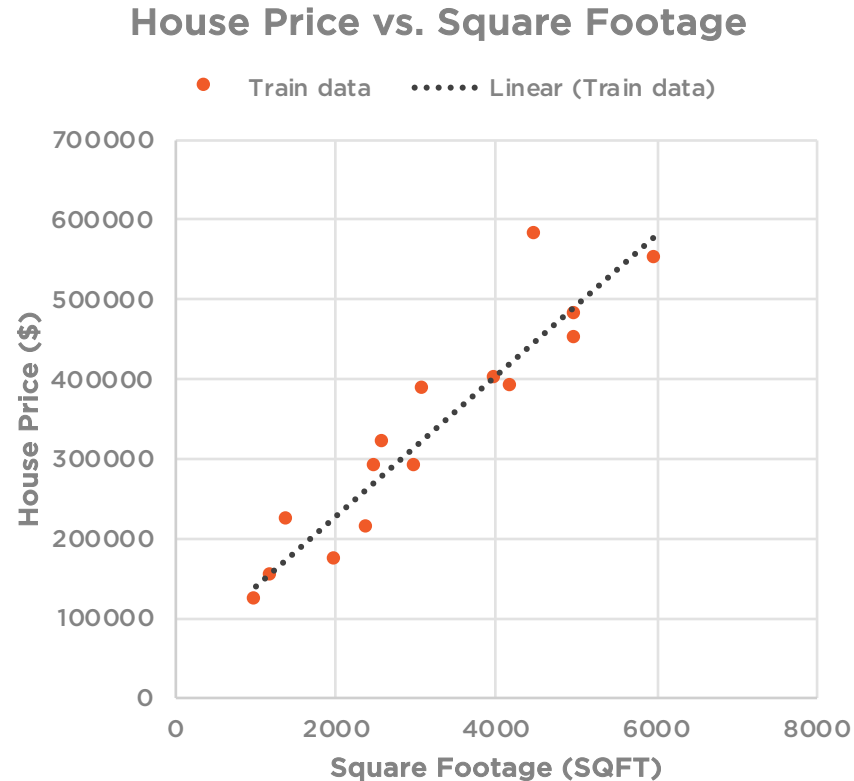
Supervised Learning: Linear Regression



Start with some known training data



Supervised Learning: Linear Regression

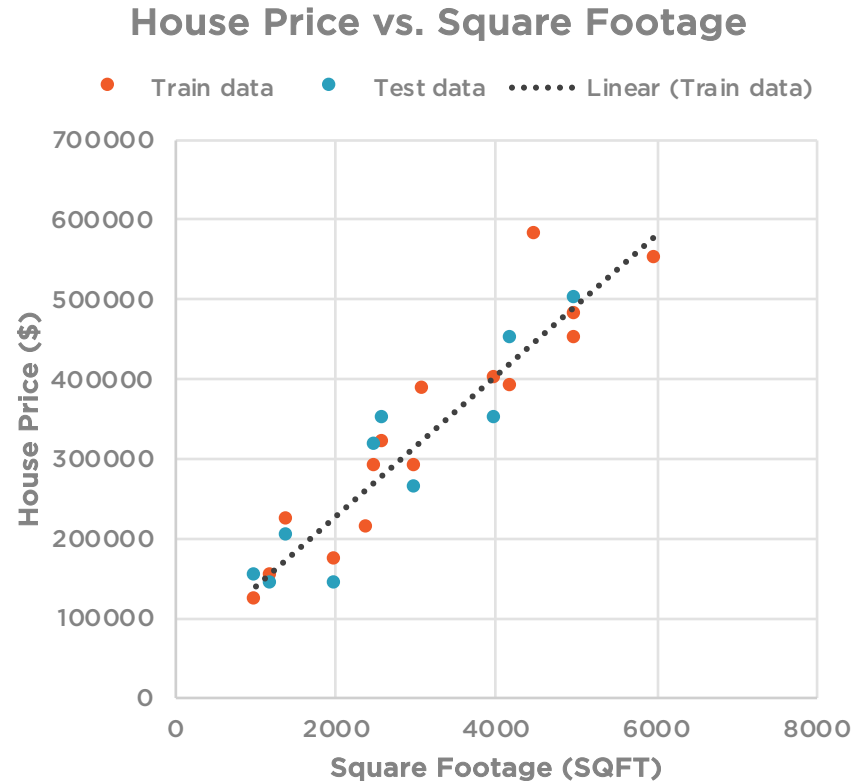


Start with some known training data

Line of best fit generated from known data



Supervised Learning: Linear Regression



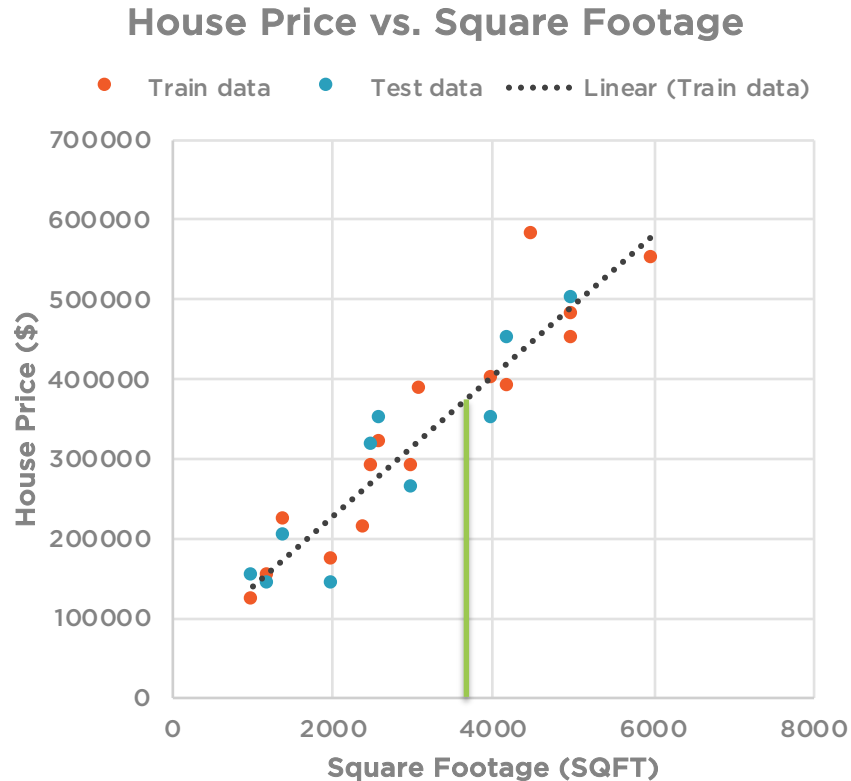
Start with some known training data

Line of best fit generated from known data

Test data used to check model accuracy



Supervised Learning: Linear Regression



Start with some known training data

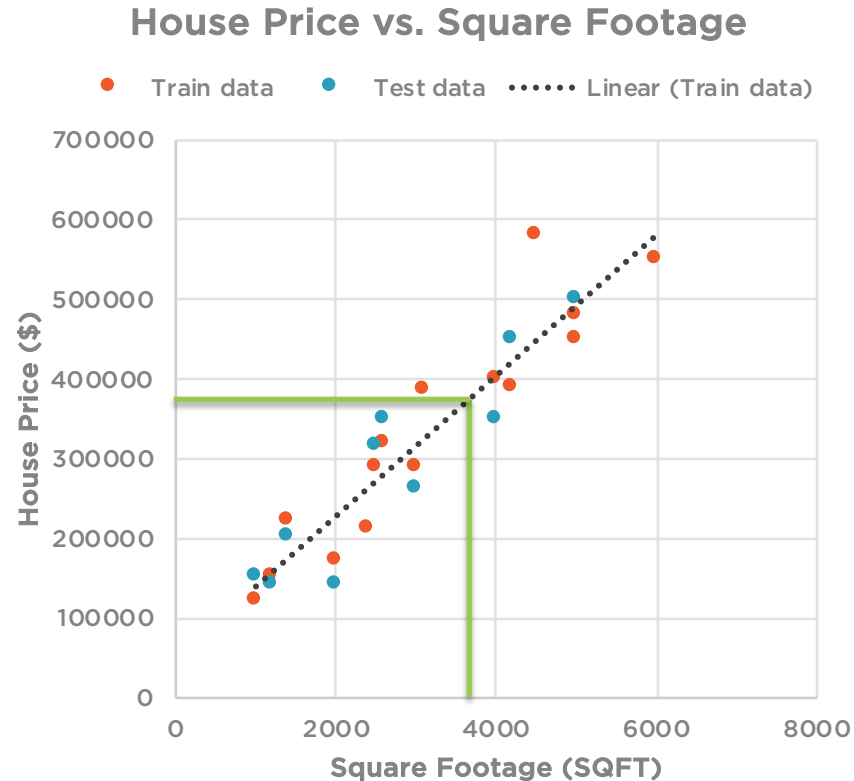
Line of best fit generated from known data

Test data used to check model accuracy

New unknown data can then be predicted



Supervised Learning: Linear Regression



Start with some known training data

Line of best fit generated from known data

Test data used to check model accuracy

New unknown data can then be predicted



Implementing Linear Regression



Understanding Neural Networks



Neural Network

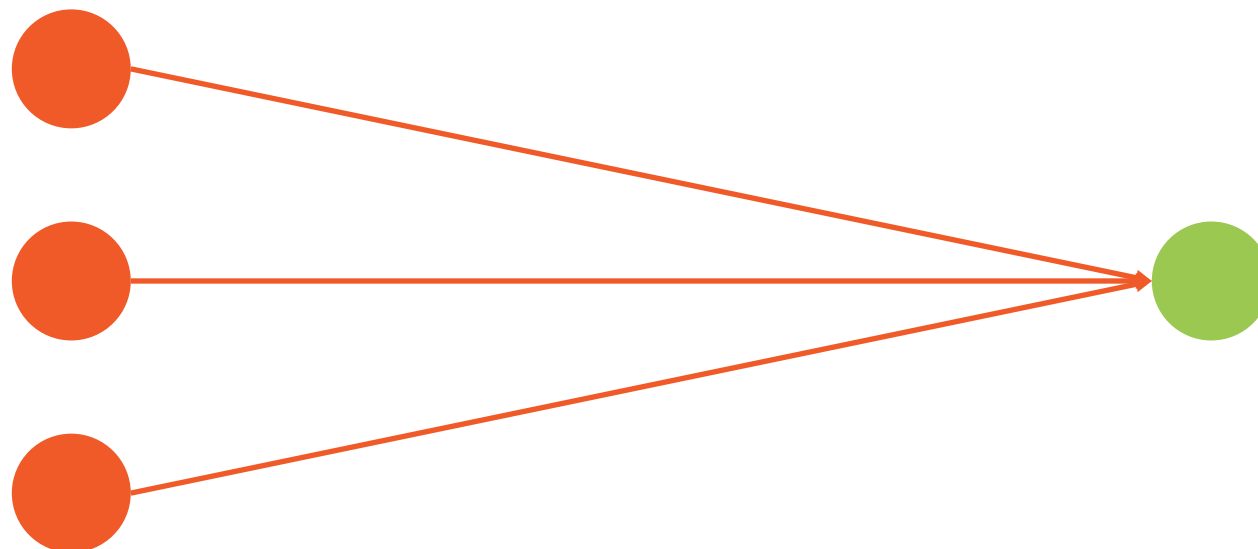
An information processing system inspired by the biological nervous system.



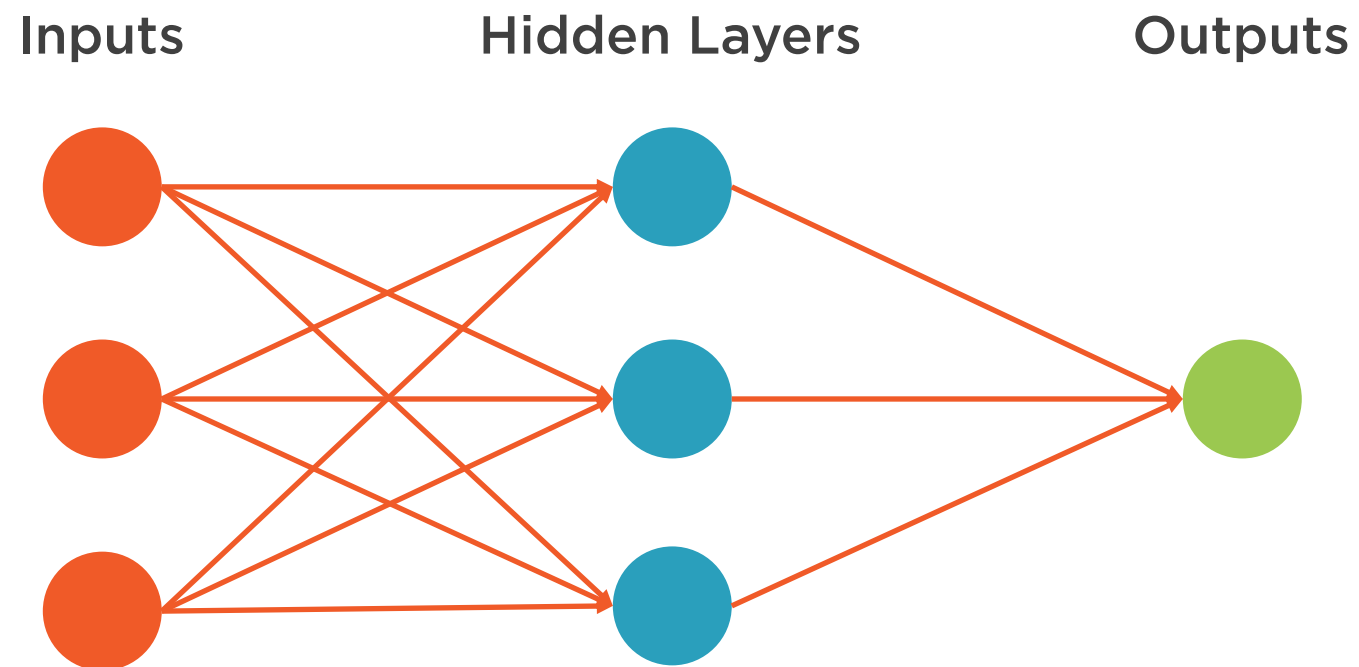
Neural Networks

Inputs

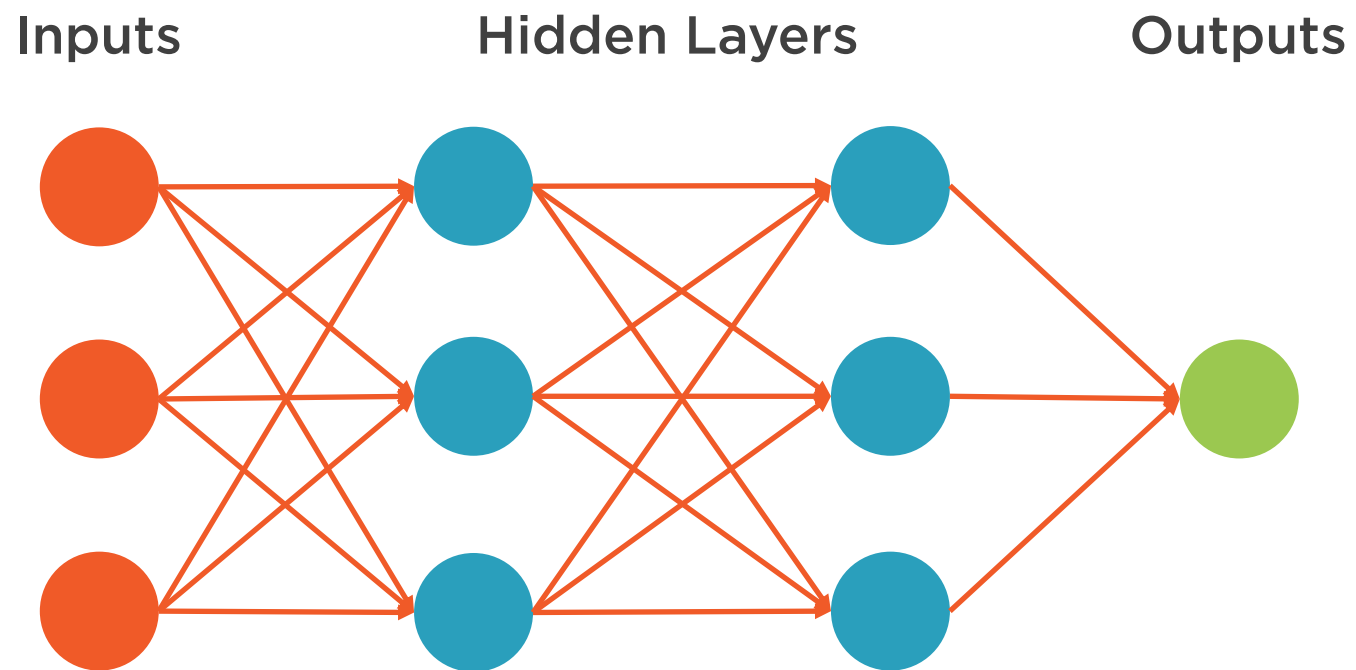
Outputs



Neural Networks



Neural Networks



Implementing Neural Networks



Summary



Discussed supervised learning systems

Introduced linear regression

Implemented a linear regression system

Introduced neural networks

Implemented a neural network system

