California State University, Dominguez Hills
Department of Computer Science
CSC 595

Professor: Dr. Benyamin Ahmadnia
bahmadniayebosari@csudh.edu

Spring 2025

Copyright Notice

These slides are distributed under the Creative Commons License.

DeepLearning.AI makes these slides available for educational purposes. You may not use or distribute these slides for commercial purposes. You may make copies of these slides and use or distribute them for educational purposes as long as you cite DeepLearning.AI as the source of the slides.

For the rest of the details of the license, see https://creativecommons.org/licenses/by-sa/2.0/legalcode

deeplearning.ai

Introduction to Deep Learning

Welcome

What you'll learn

Courses in this sequence (Specialization):

1. Neural Networks and Deep Learning
2. Improving Deep Neural Networks: Hyperparameter tuning, Regularization and Optimization
3. Structuring your Machine Learning project
4. Convolutional Neural Networks
5. Natural Language Processing: Building sequence models

train/dev/test

end-to-end

CNN

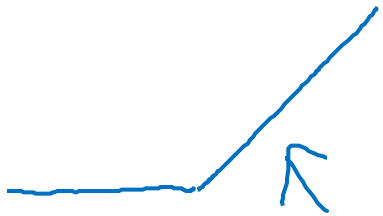
RNN, LSTM

deeplearning.ai

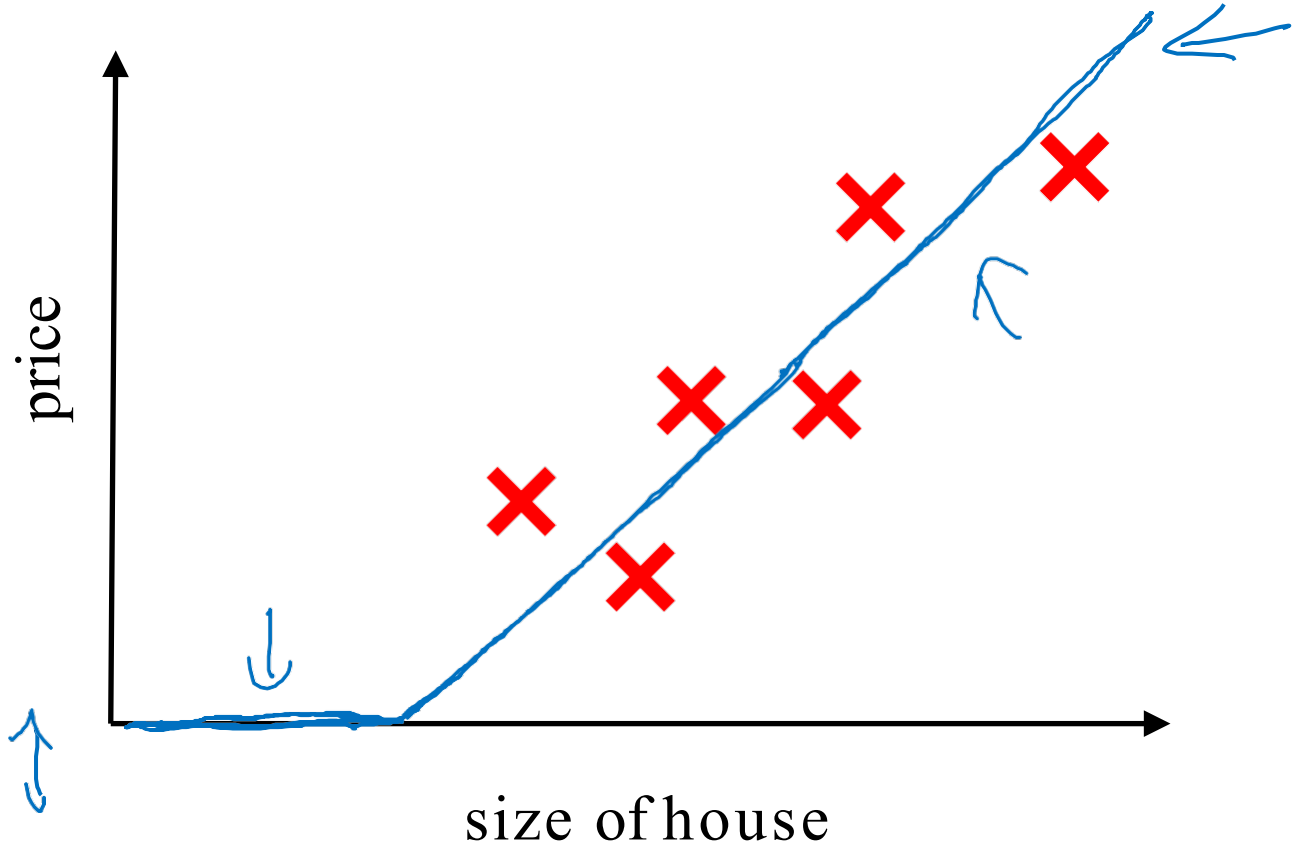
Introduction to Deep Learning

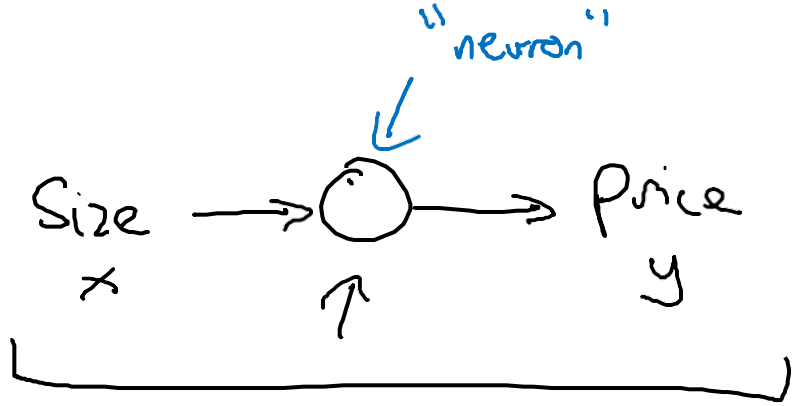
What is a Neural Network?

Housing Price Prediction

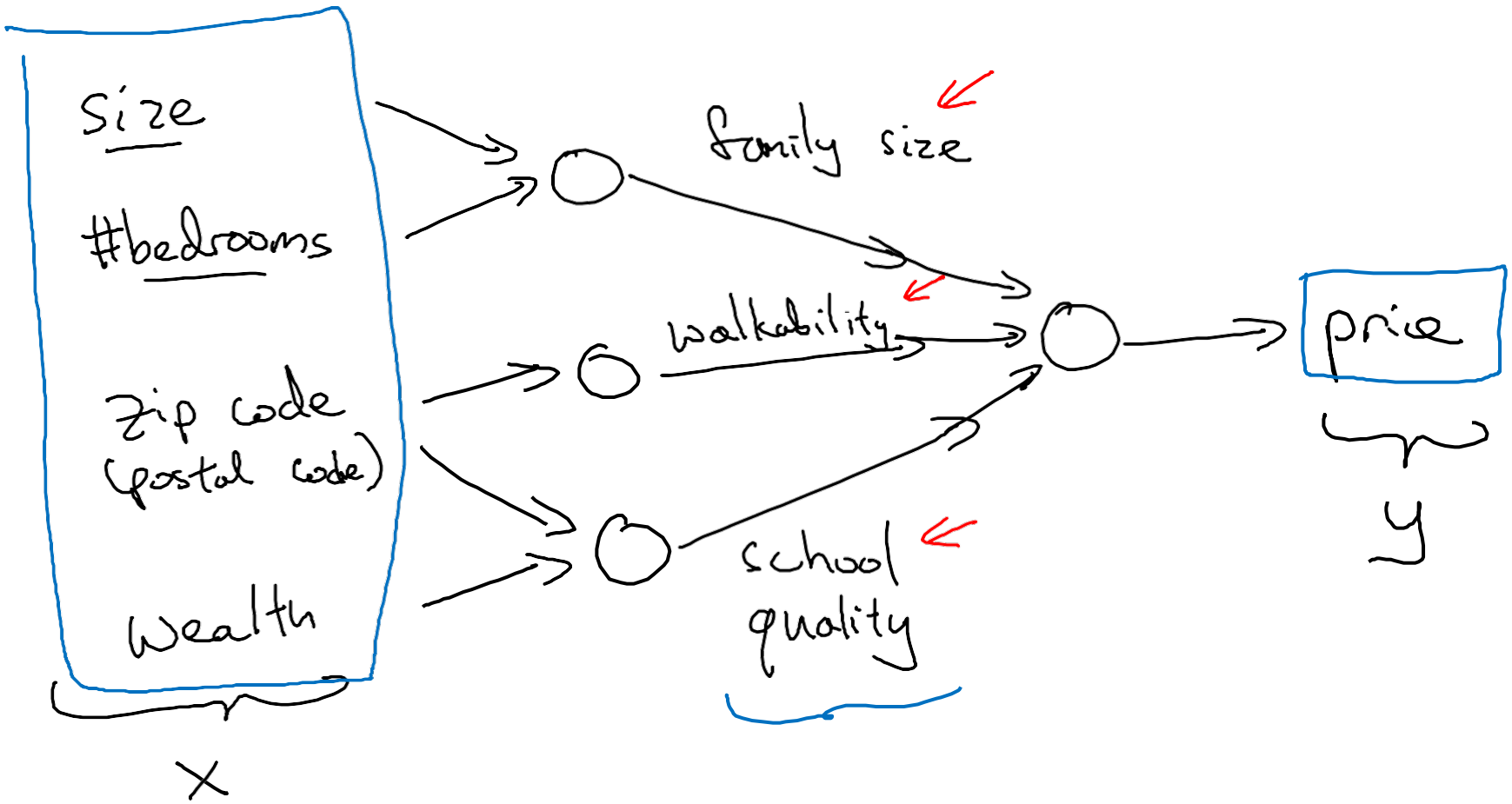


ReLU
Rectified
Linear
Unit



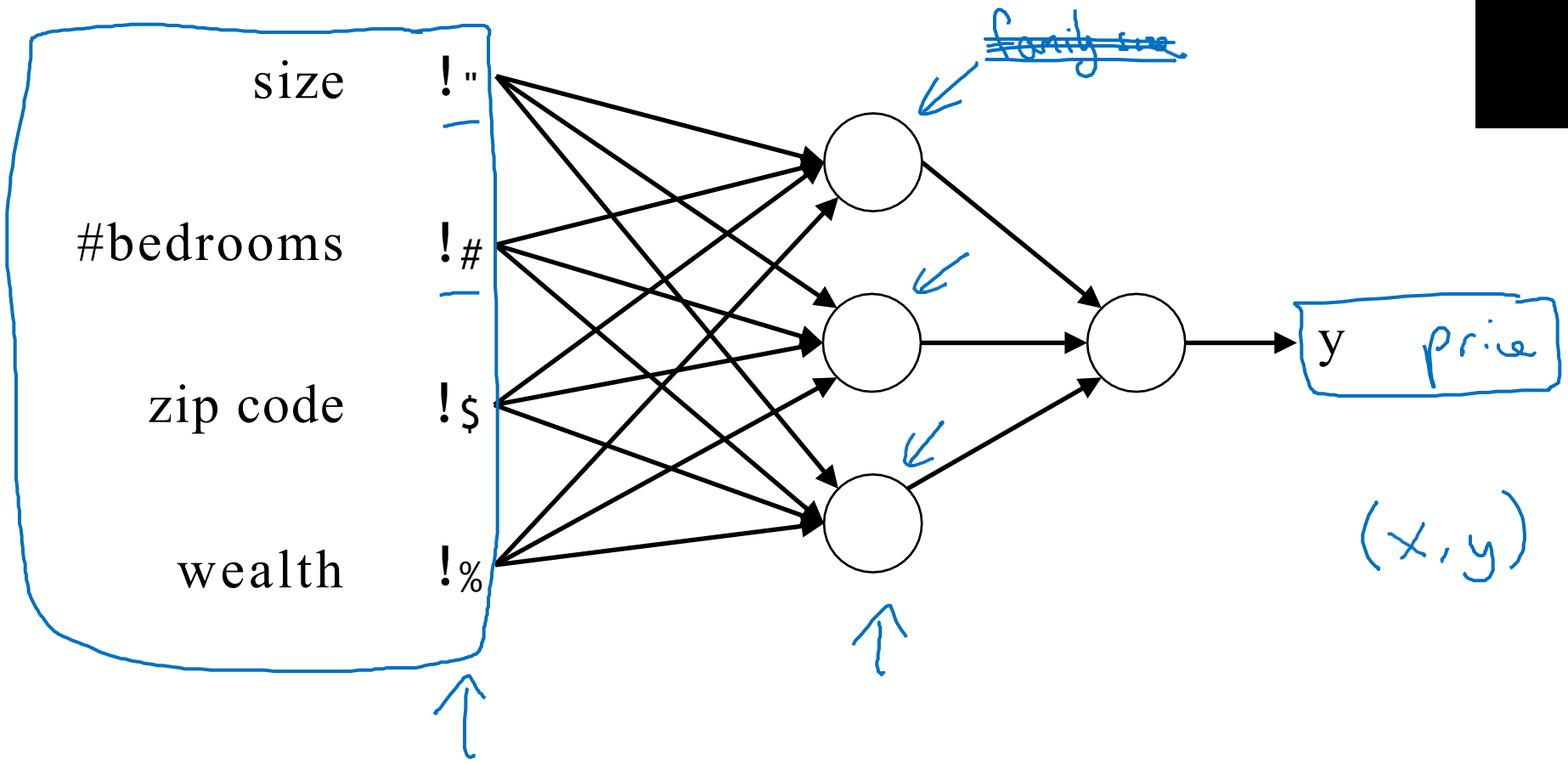


Housing Price Prediction



Housing Price Prediction

Drawing of previous Image



deeplearning.ai

Introduction to Deep Learning

Supervised Learning with Neural Networks

Supervised Learning

Input(x)	Output (y)	Application	
Home features	Price	Real Estate	Standard NN
Ad, user info	Click on ad? (0/1)	Online Advertising	Standard NN
Image	Object (1,...,1000)	Photo tagging	CNN
Audio	Text transcript	Speech recognition	RNN
English	Chinese	Machine translation	RNN
Image, Radar info	Position of other cars	Autonomous driving	Custom/ Hybrid

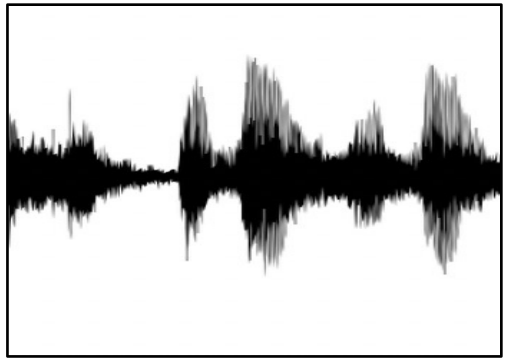
Supervised Learning

Structured Data

Size	#bedrooms	⋯	Price (1000$s)
2104	3		400
1600	3		330
2400	3		369
⋯	⋯		⋯
3000	4		540

User Age	Ad Id	⋯	Click
41	93242		1
80	93287		0
18	87312		1
⋯	⋯		⋯
27	71244		1

Unstructured Data



Audio

Image

Four scores and seven years ago…

Text