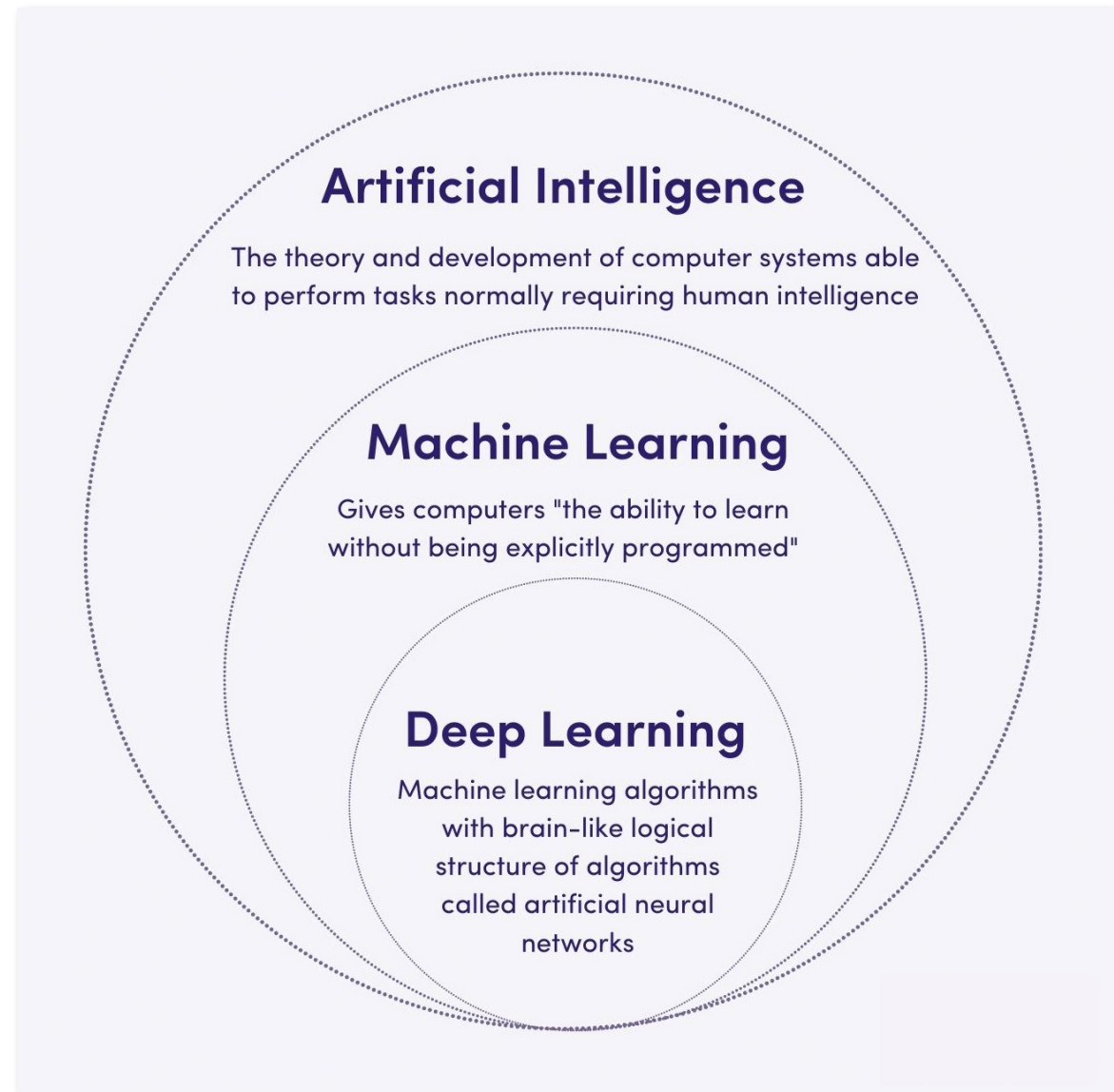


DS5006 - Deep Learning

Grading

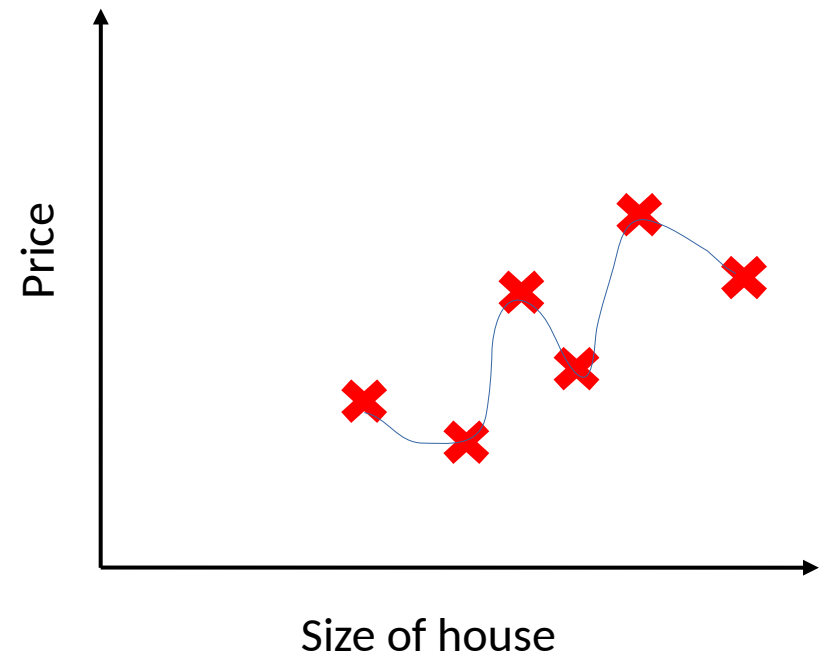
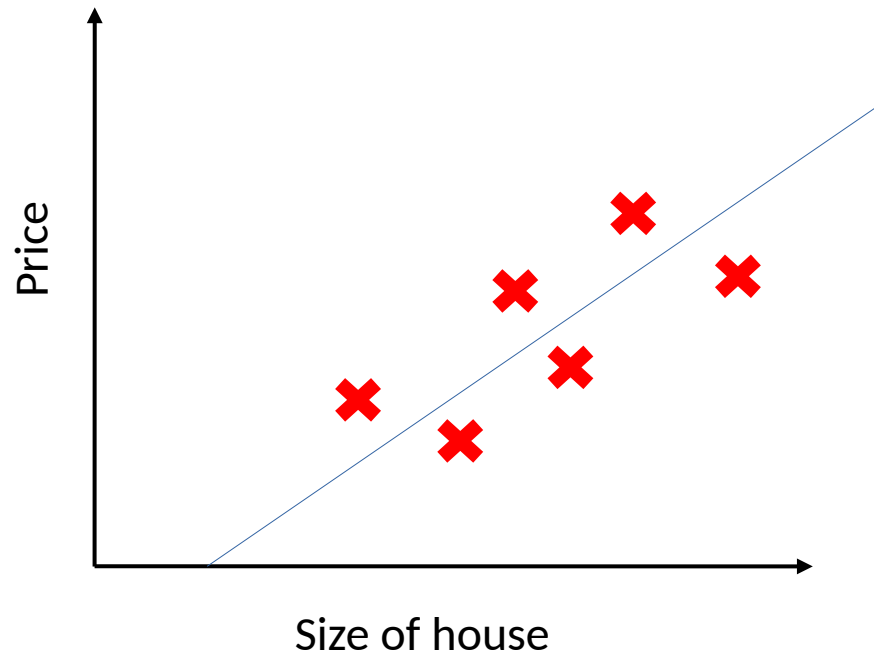
- Assignments/Quizzes – 10%
- Project – 7%
- Class Participation – 3%
- Sessionals – 30%
- Final Exam – 50%

Deep Learning

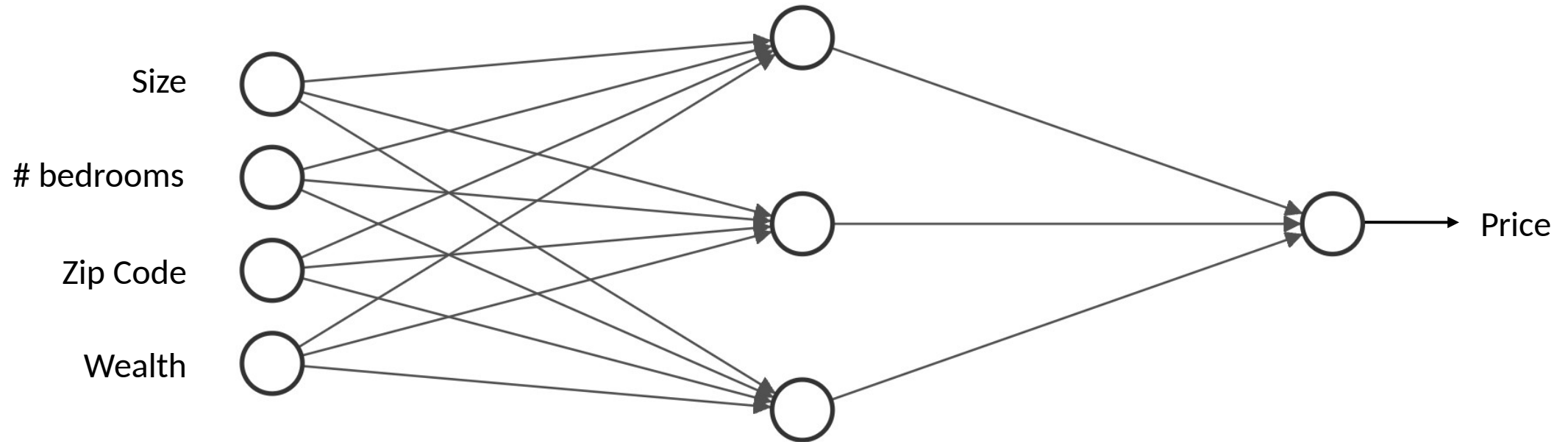


What is a Neural Network?

Housing Price Prediction



Housing Price Prediction

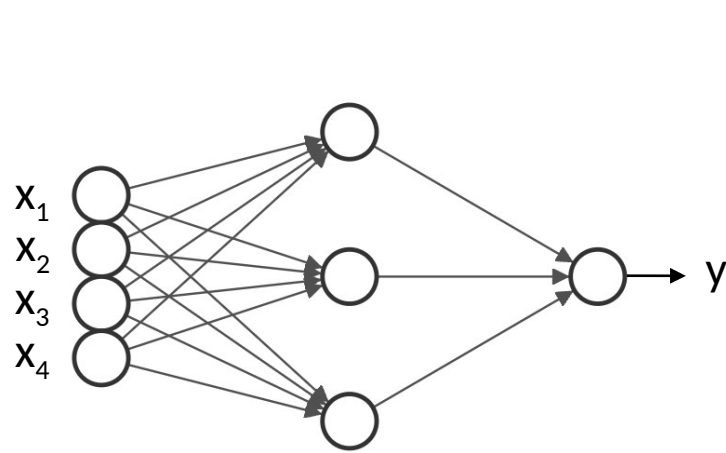


Supervised Learning with Neural Networks

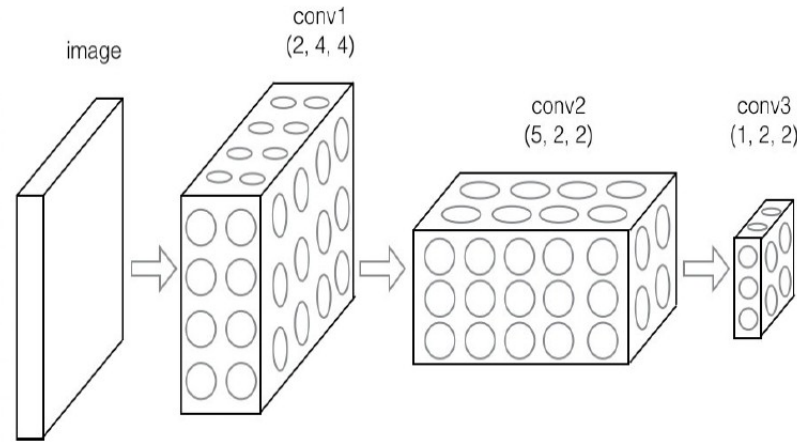
Supervised Learning

Input (x)	Output (y)	Application	
Home Features	Price	Real Estate	
Ad, User Info	Clicked on Ad? (0/1)	Online Advertising	} Standard NN
Image	Object	Photo Tagging	
Audio	Text Transcript	Speech Recognition	} Conv. NN
English	Urdu/Pashto/Any Lang.	Machine Translation	
Image, Radar Info	Position of other cars	Autonomous Driving	} Custom / Hybrid

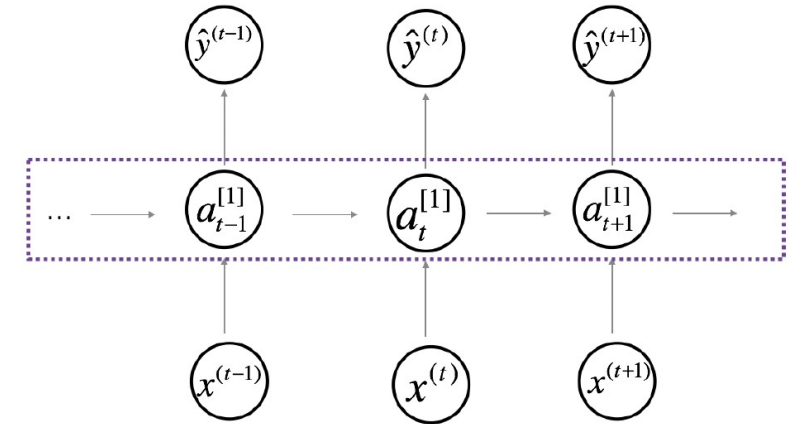
Neural Network Examples



Standard NN



Convolutional NN



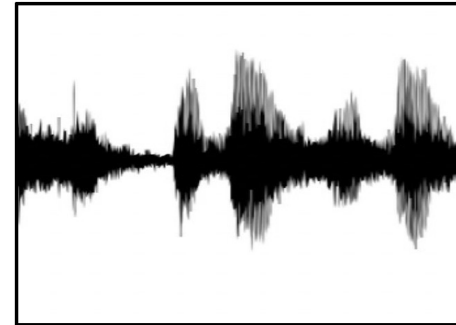
Recurrent NN

Supervised Learning

Structured Data

Size	# bedrooms	...	Price
2104	3		400,000
1600	3		330,000
2500	3		372,000
...
3100	4		540,000

Unstructured Data



Audio



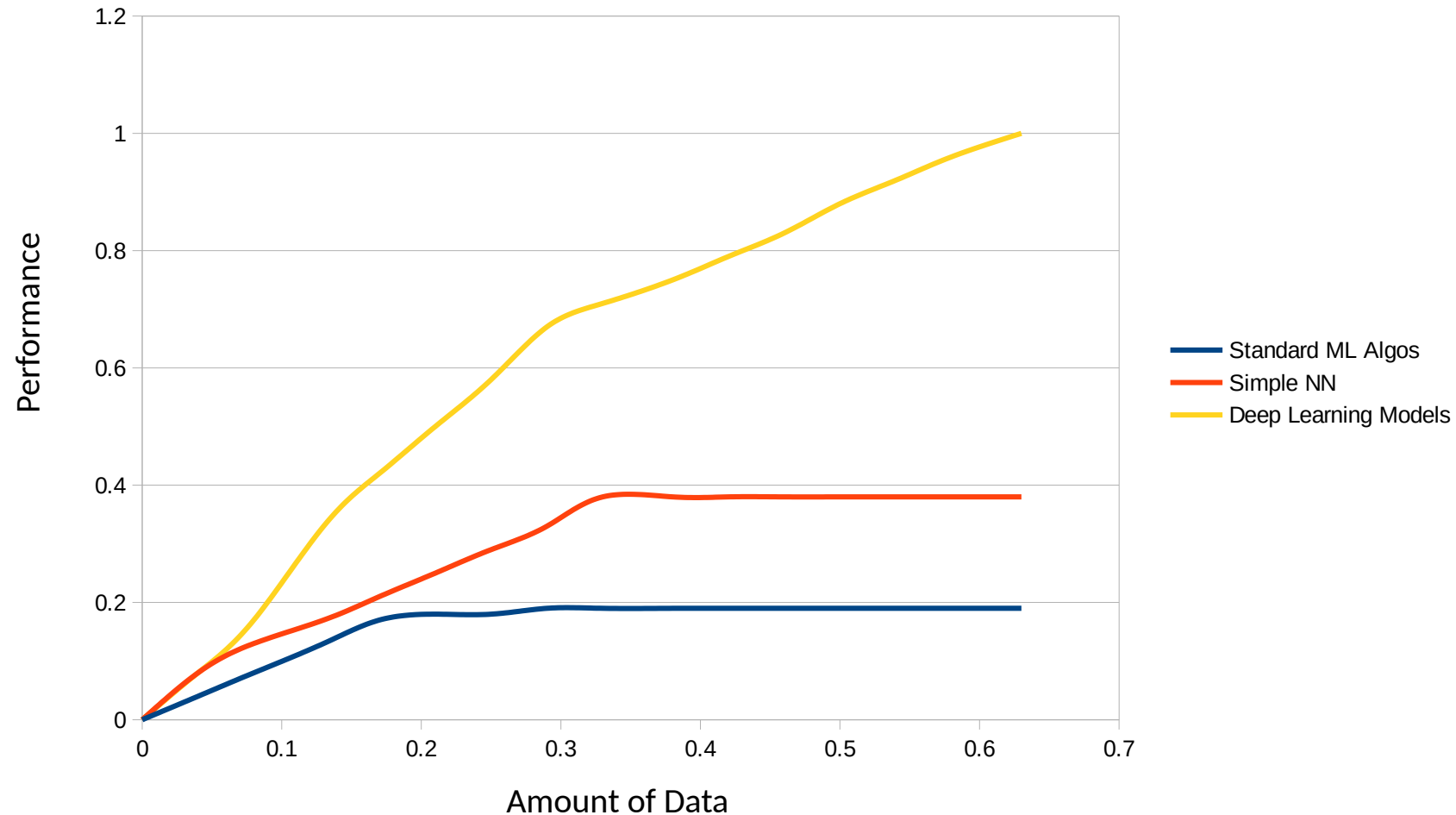
Image

*Four scores and seven
years ago...*

Text

Why is Deep Learning
taking off?

Scale drives deep learning progress



Scale drives deep learning progress

- Data
- Computations
- Algorithms