

# Introduction to Deep Learning

source : deeplearning.ai

## Supervised Learning with Neural Networks

### Supervised Learning

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

1、 2: Standard NN

3: CNN

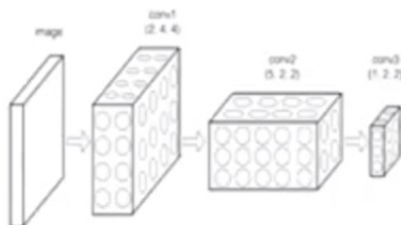
4、 5: RNN

6: Custom/Hybrid Neural Network 混合模型

# Neural Network examples



Standard NN



Convolutional NN



Recurrent NN



一维序列化数据也许就是时序数据

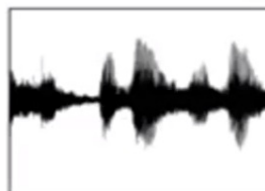
## Supervised Learning

### Structured Data

Size	#bedrooms	...	Price (1000\$)
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