Introduction to Deep Learning Study Group

Week 1

Dendrite

Axon terminal

x_1

x_2

$\vdots$

x_n

Cell body

Myelin sheat

Myelinated axon

y_1

y_2

$\vdots$

y_m

Outputs

Inputs

x_1

w_1

Inputs

x_2

w_2

Neu-ron
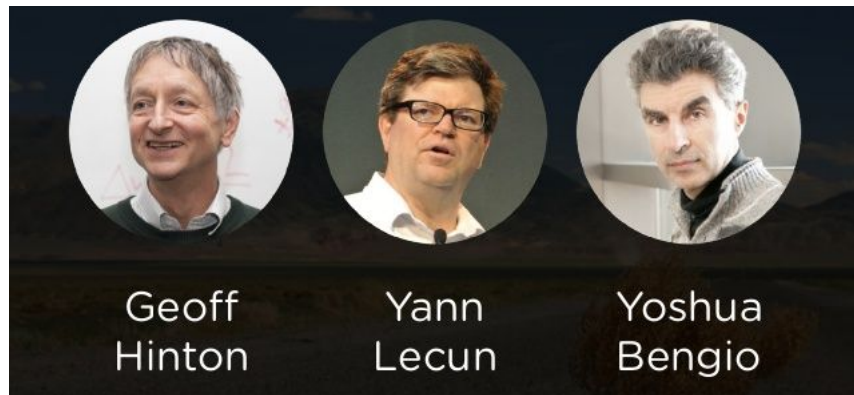
Output

w_3

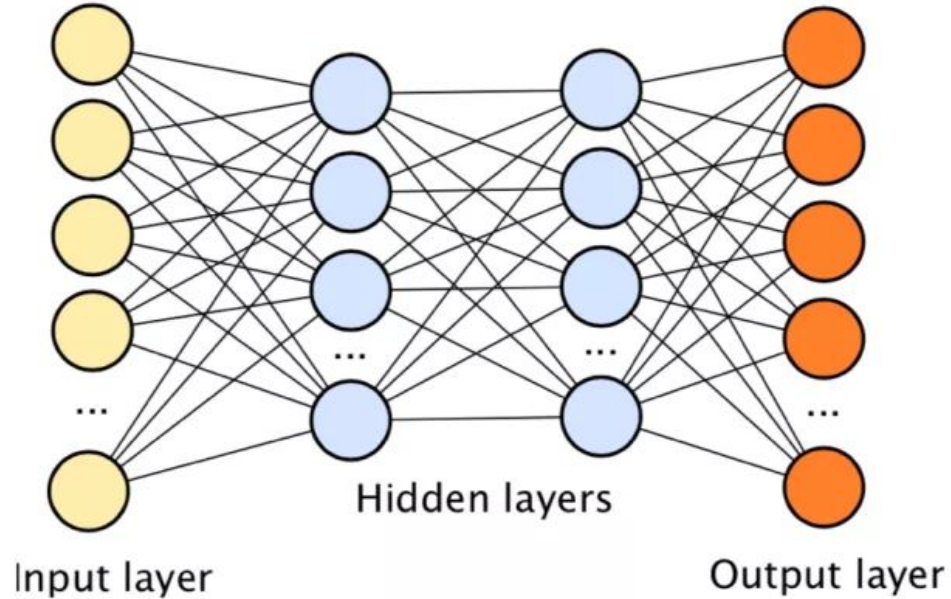x_3
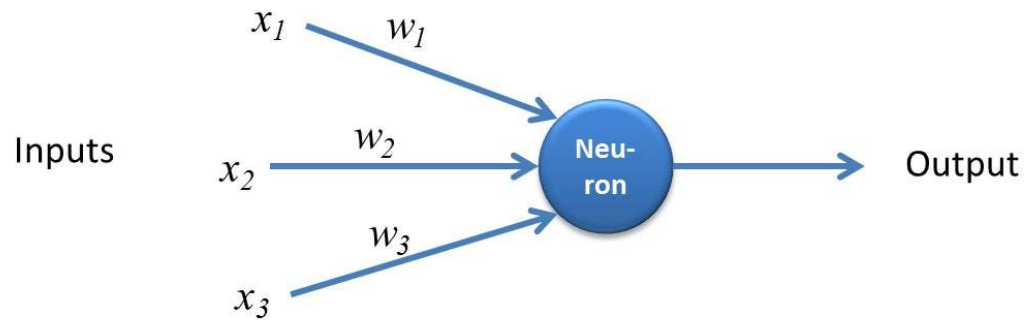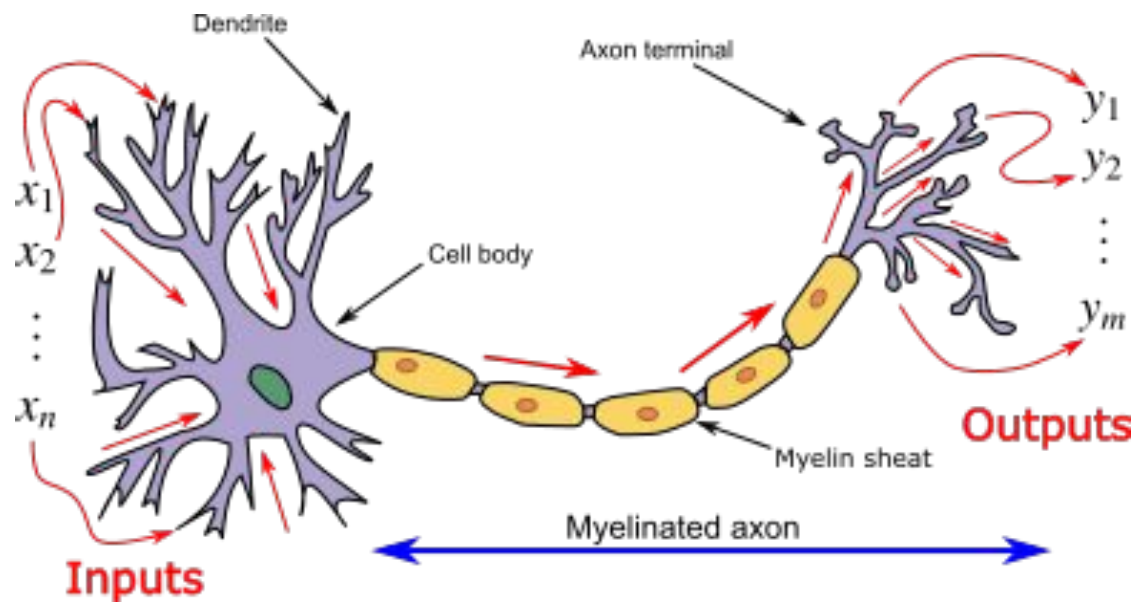
Geoffrey Hinton

- Backpropagation

Yann LeCun
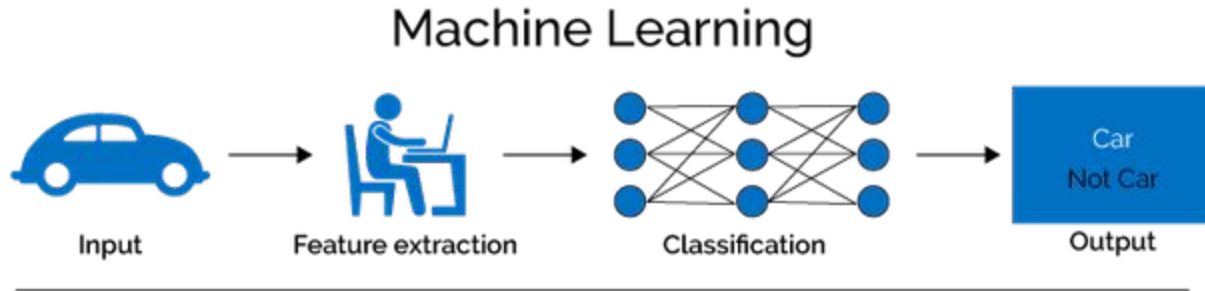
- Convolutional Neural Networks(CNN)
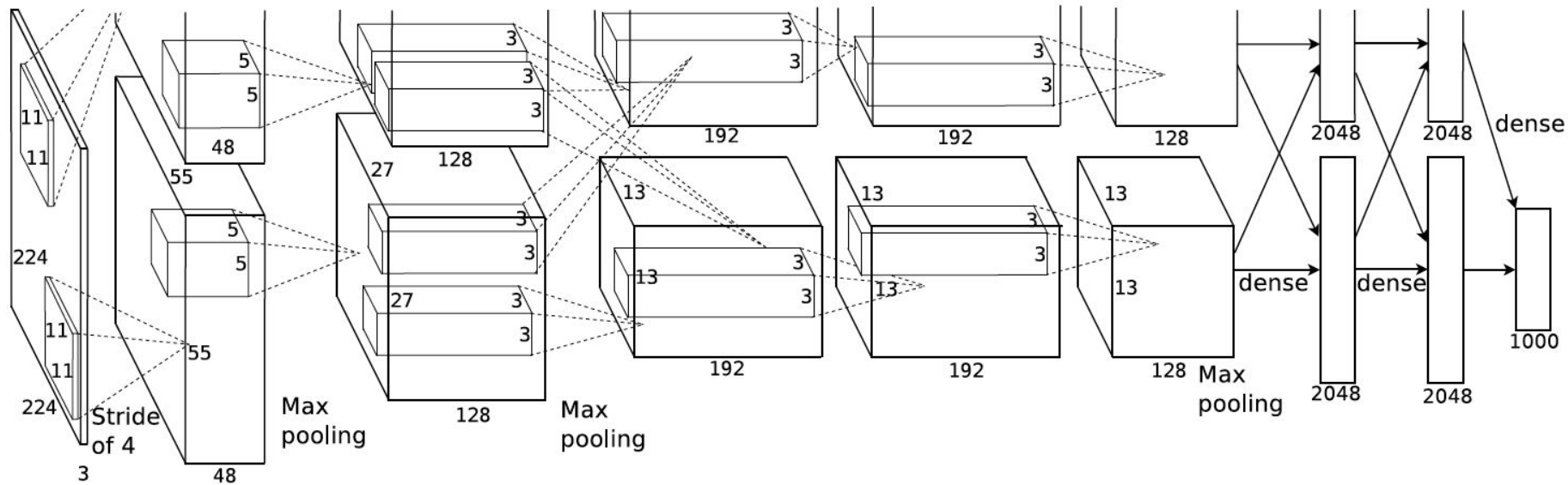
Yoshua Bengio

- Gradient Based Learning

What is Deep Learning?

Input layer

Hidden layers
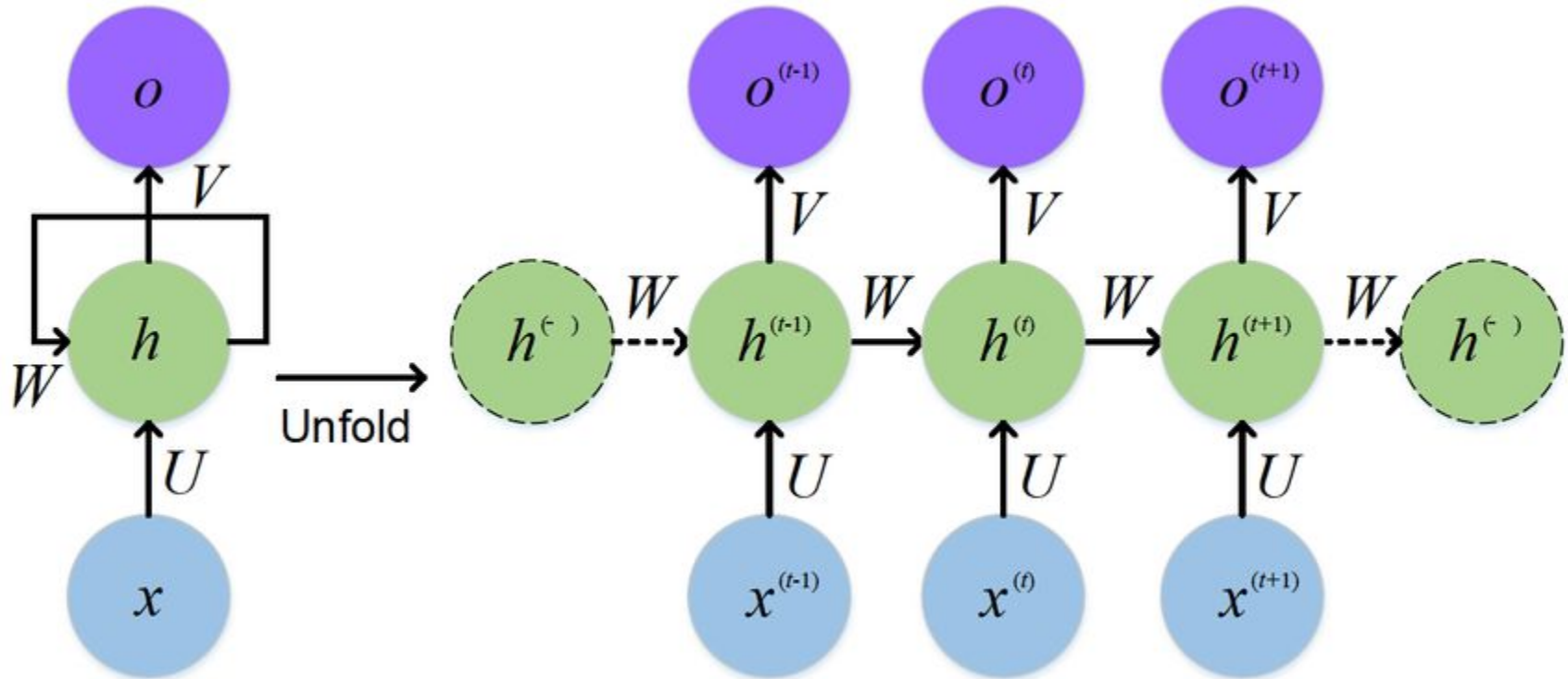
Output layer

What is Deep Learning?
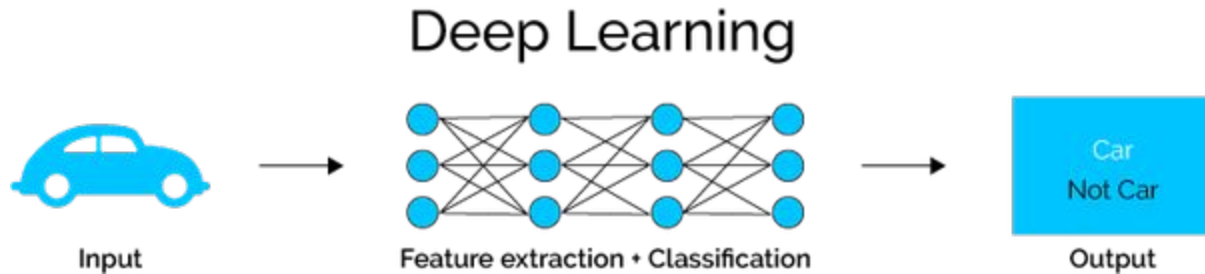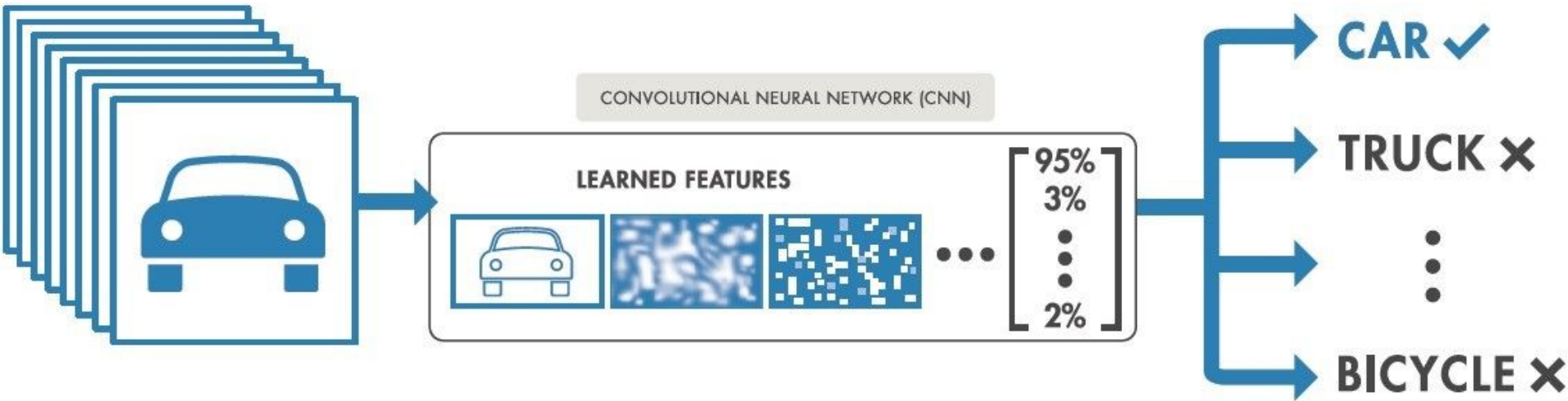
Convolutional Neural Networks (CNNs)

Taken from AlexNet paper

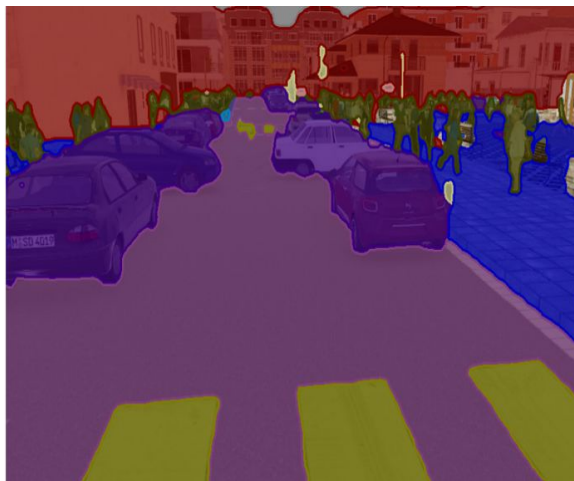# Recurrent Neural Networks (RNNs)

Deep Learning Fields of Study

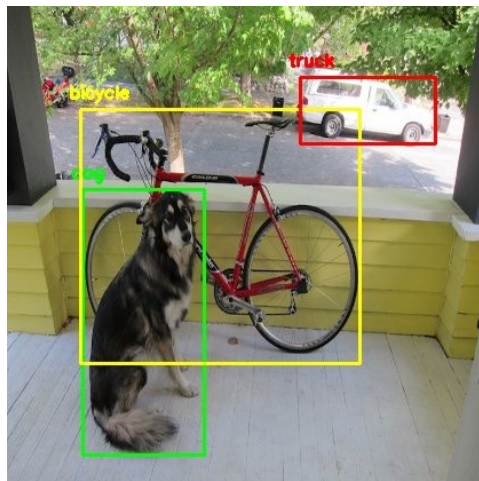Image Recognition and classification...
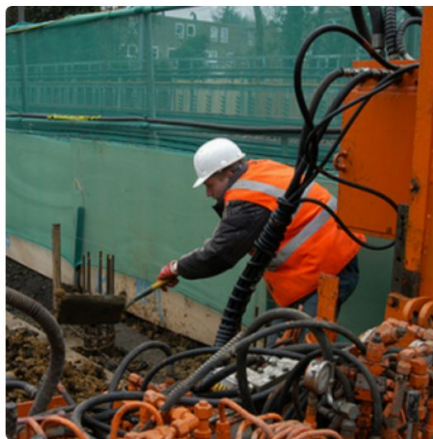
Deep Learning Fields of Study

Object Detection, Segmentation and Autonomous Car Driving...

Video(Scene) classification, speech recognition, photo captioning...

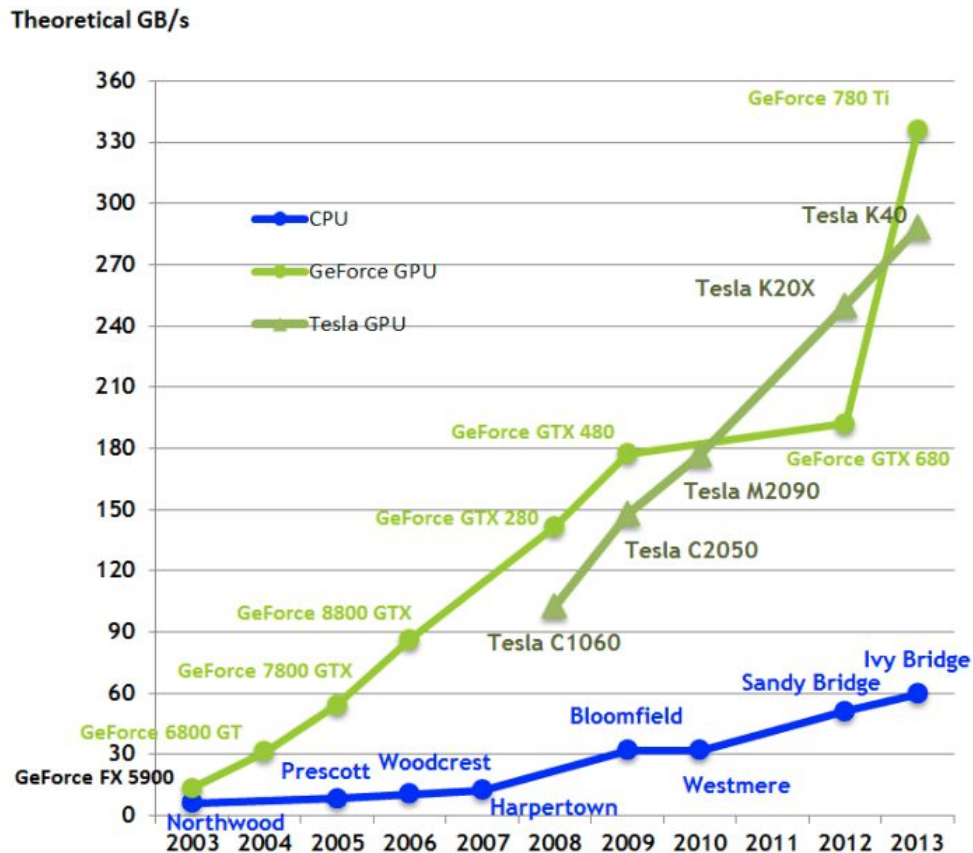"man in black shirt is playing guitar."

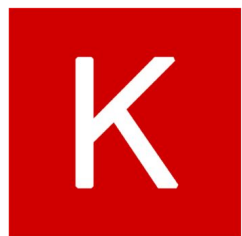"construction worker in orange safety vest is working on road."

"two young girls are playing with lego toy."

Speed

Frameworks for Deep Learning

Syllabus

#Date	#Topic	#Description
11 October 2019	Course Introduction	Deep Learning nedir,kullanım alanları nelerdir, niye bu kadar popüler gibi sorulara değinilip kısaca syllabus'tan bahsediş
18 October 2019	Logistic Regression & NumPy 1	Logistic Regression algoritması ve NumPy ile implemente edilmesi(ağırlıklı olarak NumPy)
25 October 2019	Logistic Regression & NumPy 2	Logistic Regression algoritması ve NumPy ile implemente edilmesi(implementation)
15 November 2019	Linear classification and Loss Function	Nöral ağlarda gerçekleşen forward propagation ve kayıp fonksiyonu
22 November 2019	Backpropagation & Deeper Neural Networks	Nöral ağlarda gerçekleşen update olayları ve birden fazla katmanlı derin nöral ağlar
29 November 2019	Hyperparameter Tuning	Nöral Ağlarda üzerinde yapılan küçük verimli uygulamalar
6 December 2019	Implementation using a framework	Seçilen bir Python framework'ü kullanarak NumPy ile yazılmış kodları karşılaştırma

Lessons will be around 1:30 - 2 hours