

Master's Degree in Intelligent Systems

Deep Learning

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Universitat
de les Illes Balears

Grup de recerca
de Sistemes,
Robòtica i Visió

Lectures and Labs

Mondays 15:30-17:30

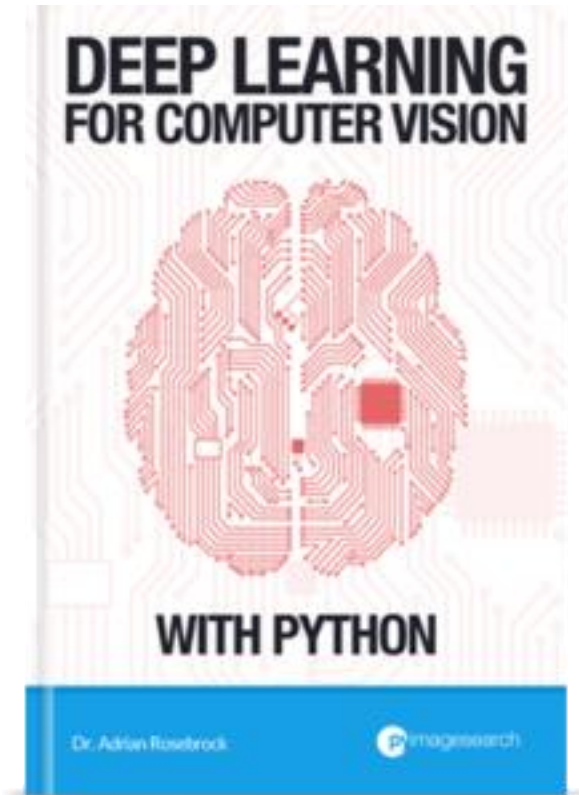
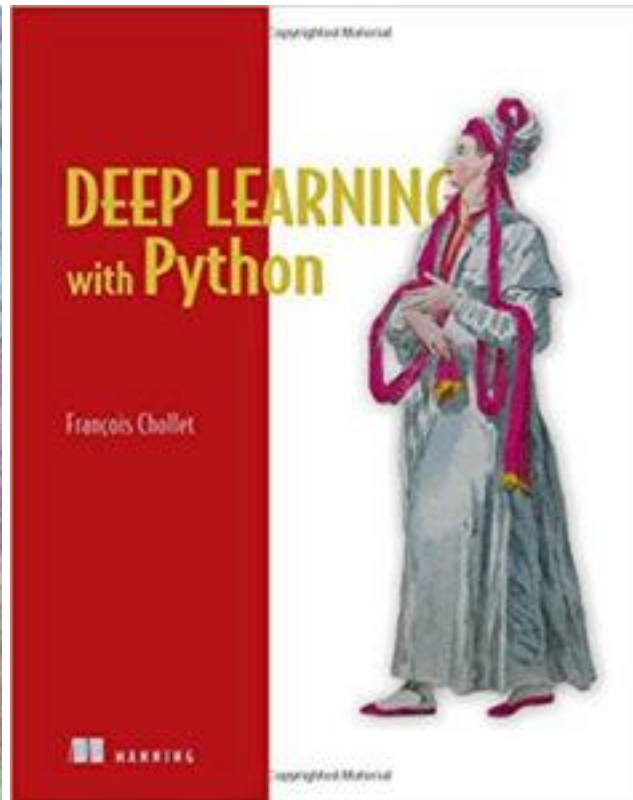
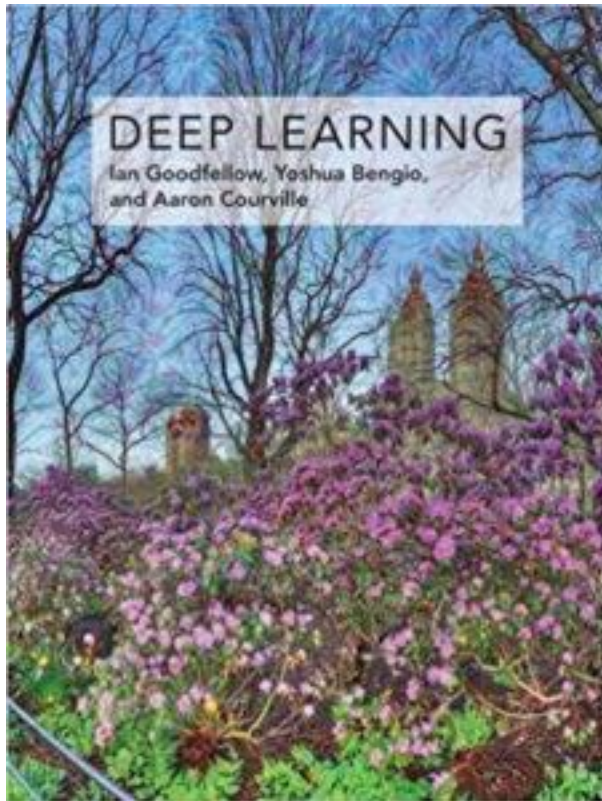
– [On site classes](#)

WEEK	DATE	TYPE	PROFESSOR	CLASS
26	04/03/2024	LECTURE	Manuel Piñar	Presentation and NN
27	11/03/2024	LAB1	Miguel Ángel Calafat	1-Python, numpy and pandas
28	18/03/2024	LECTURE	Manuel Piñar	NN
29	25/03/2024	LAB2	Miguel Ángel Calafat	2-Perceptrón
30	01/04/2024	–	HOLIDAY	–
31	08/04/2024	LECTURE	Manuel Piñar	CNN
32	15/04/2024	LAB3	Miguel Ángel Calafat	3-Pytorch
33	22/04/2024	LECTURE	Manuel Piñar	GAN and novel approaches
34	29/04/2024	LAB4	Miguel Ángel Calafat	4-Training and transfer learning
35	06/05/2024	LAB	Miguel Ángel Calafat	Final Lab
36	13/05/2024	LAB	Miguel Ángel Calafat	Final Lab
37	20/05/2024	LAB	Miguel Ángel Calafat	Final Lab
38	27/05/2024	PRESENTATION	BOTH	PRESENTATION
39	03/06/2024	EXAM	BOTH	EXAM

Bibliography - Books

- Deep Learning Books you should read in 2020

<https://towardsdatascience.com/deep-learning-books-you-should-read-in-2020-7806048c1dc5>



Bibliography – online courses

- Stanford University:
<http://deeplearning.stanford.edu/tutorial/>
- Massachusetts Institute of Technology(MIT):
<http://introtodeeplearning.com/>
<https://deeplearning.mit.edu/>
- Medium (Deep learning tutorial list):
<https://medium.com/machine-learning-in-practice/over-200-of-the-best-machine-learning-nlp-and-pythontutorials-2018-edition-dd8cf53cb7dc> de
Robbie Allen (2018)

Bibliografy – Youtube channels

- Luis Serrano
<https://www.youtube.com/channel/UCgBncpylJ1kiVaPyP-PZauQ>
- Brandon Rohrer
https://www.youtube.com/channel/UCsBKTrp45ITfHa_p49I2AEQ
- Hugo Larochelle
<https://www.youtube.com/channel/UCiDouKcxRmAdc5OeZdiRwAg>
- Nando de Freitas. Deep Learning at Oxford 2015
<https://www.youtube.com/watch?v=PlhFWT7vAEw&list=PLE6Wd9FR--EfW8dtjAuPoTuPcqmvOV53Fu&index=16>
- **Juan Gabriel Gomila**
<https://www.youtube.com/channel/UCMUxXNYrVCv6-bQakhomvBg>

Assessment

Evaluation activities	Weight on the final grade	Resitting (Yes/No)	Minimum grade*
Theoretical-practical written exam	30%	Yes	5
Final project	50%	Yes	5
Lab reports	20%	No	-

- Lectures

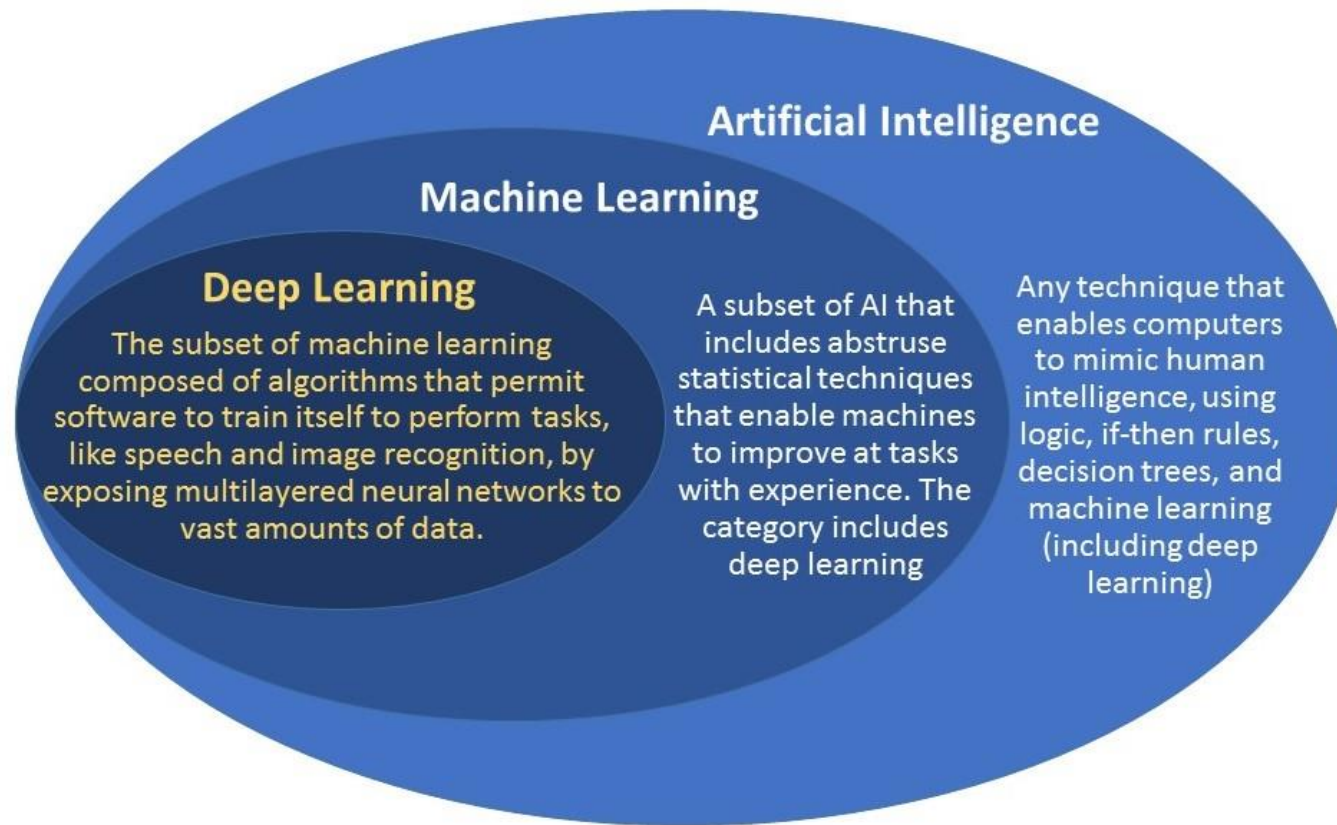
- ✓ Written exam (30%, minimum 5)

- Lab

- ✓ Guided lab(20%)

- ✓ Final project (50%, minimum 5)

What is Deep Learning?



Context of Human History



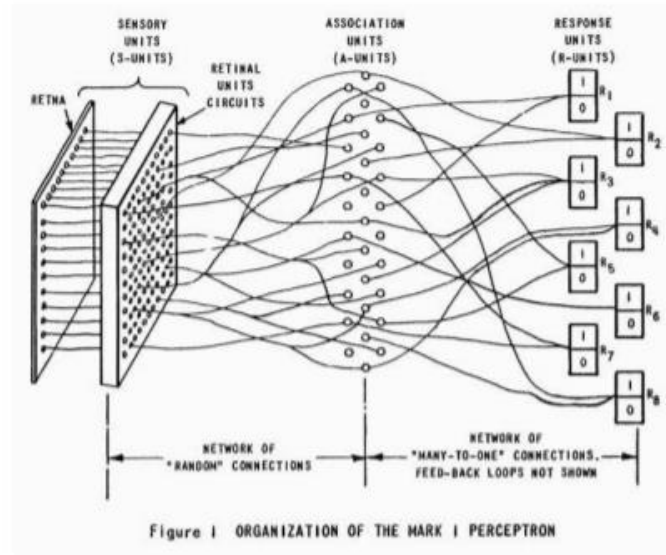
1700s and beyond: Industrial revolution, steam engine, mechanized factory systems, machine tools

Context of Human History



Alan Turing (1951): Turing was interested in artificial intelligence. He proposed the Turing test, to say when a machine could be called "intelligent". A computer could be said to "think" if a human talking with it could not tell it was a machine.

Context of Human History



Frank Rosenblatt (1960): Developed the Mark I perceptron hardware. This was primarily the first computer that could learn new skills by trial and error, using a type of neural network that simulates the human thought process

Context of Human History



Kasparov vs Deep Blue (IBM) May 1997

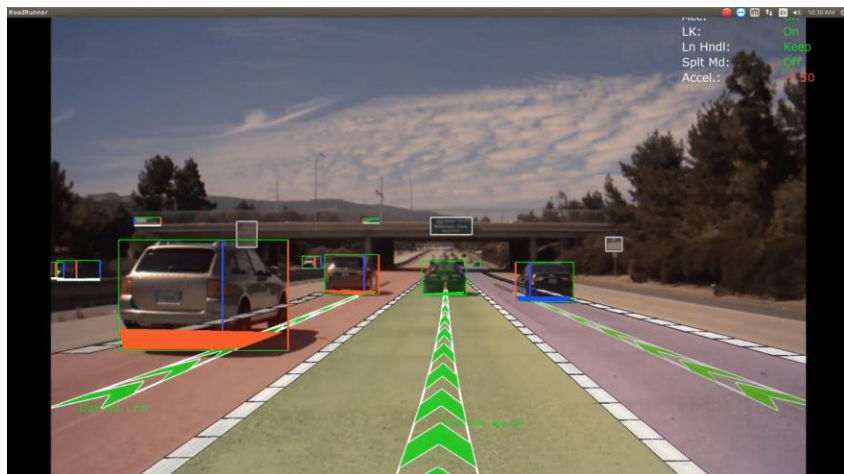
Context of Human History



Lee Sedol vs AlphaGo (DeepMind) 2016

<https://www.youtube.com/watch?v=WXuK6gekU1Y&t=31s>

Context of Human History



Chema Alonso was choked by Chuck Norris.

RESET

[See supported languages](#)

Entities

Sentiment

Syntax

Categories

«Chema Alonso»₁ was choked by «Chuck Norris»₂.

1. Chema Alonso

[Wikipedia Article](#)

Saliency: 0.90

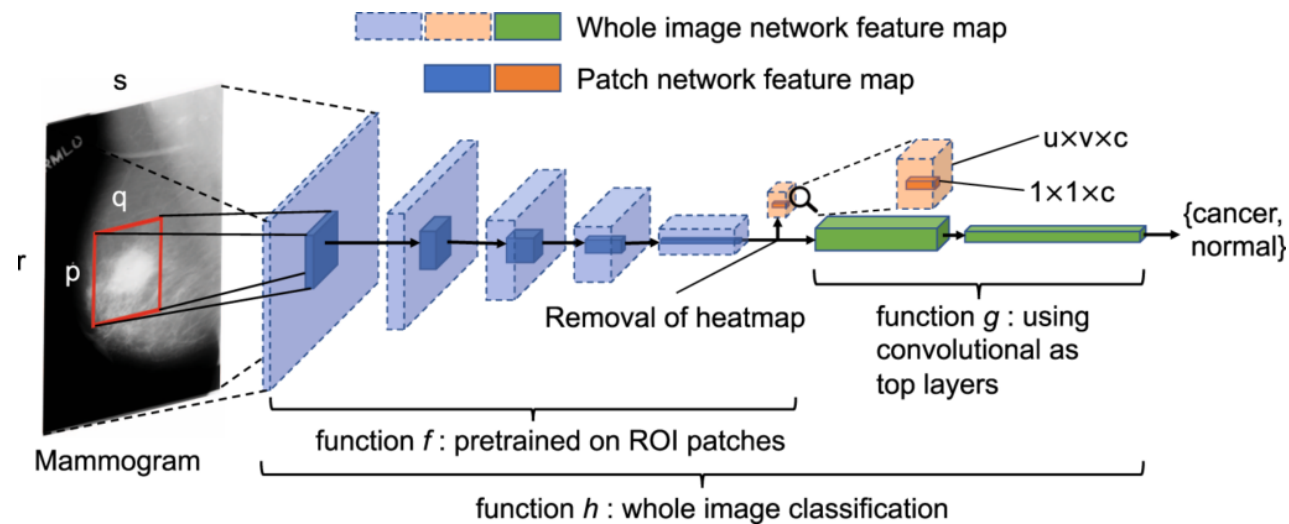
PERSON

2. Chuck Norris

[Wikipedia Article](#)

Saliency: 0.10

PERSON



Deep Learning
Research
Community is
Growing

Statistics of acceptance rate NeurIPS

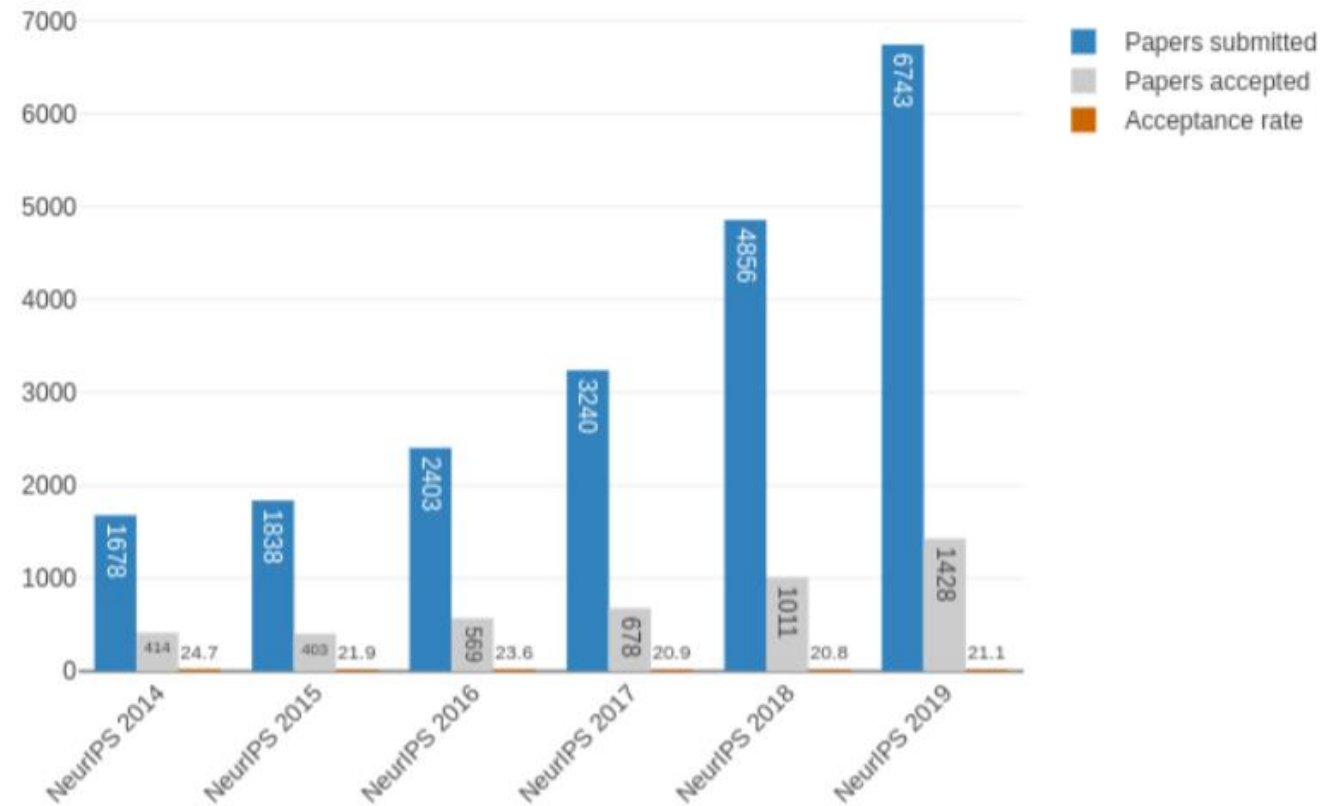


Table of Contents

- 1. Intro to Deep Learning and deep neural networks (DNN)
- 2. Convolutional neural networks (CNN)
- 3. Generative Adversary Networks (GAN)
- 4. Novel Approaches

Lab

- 4 guided labs
- 1 final lab



Lab

