

Neural Networks and Deep Learning - 2025 Theoretical foundations						Online lectures on Teams
#	Date	Day	Time	hours	Teacher	Topic
1	07/01/2025	Martedì	09:00	2.5	Buttazzo	Basic concepts and learning paradigms
2	08/01/2025	Mercoledì	09:00	2.5	Buttazzo	Hopfield networks and Kohonen networks
3	14/01/2025	Martedì	09:00	2.5	Buttazzo	Clustering algorithms
4	15/01/2025	Mercoledì	09:00	2.5	Buttazzo	Reinforcement learning
5	21/01/2025	Martedì	09:00	2.5	Buttazzo	Extensions of Reinforcement learning
6	22/01/2025	Mercoledì	09:00	2.5	Buttazzo	Supervised learning
7	28/01/2025	Martedì	09:00	2.5	Buttazzo	Performance metrics
8	29/01/2025	Mercoledì	09:00	2.5	Buttazzo	RBF Networks

20

Neural Networks and Deep Learning - 2025 Deep Networks						Online lectures on Teams
#	Date	Day	Time	hours	Teacher	Topic
1	04/02/2025	Martedì	09:00	2.5	Buttazzo	Towards deep networks: problems and solutions
2	05/02/2025	Mercoledì	09:00	2.5	Buttazzo	Autoencoders and Convolutional networks for classification
3	11/02/2025	Martedì	09:00	2.5	Buttazzo	Deep networks for object detection
4	12/02/2025	Mercoledì	09:00	2.5	Buttazzo	Deep networks for segmentation
5	18/02/2025	Martedì	09:00	2.5	Buttazzo	Generative adversarial networks
6	19/02/2025	Mercoledì	09:00	2.5	Buttazzo	Recurrent Neural Networks
7	25/02/2025	Martedì	09:00	2.5	Buttazzo	Transformers
8	26/02/2025	Mercoledì	09:00	2.5	Buttazzo	Deep reinforcement learning

20

Neural Networks and Deep Learning - 2025 Advanced Topics						Online lectures on Teams
#	Date	Day	Time	hours	Teacher	Topic
1	04/03/2025	Martedì	09:00	2	Buttazzo	Model-based reinforcement learning
2	05/03/2025	Mercoledì	09:00	2	Buttazzo	Semi-Supervised Learning
3	11/03/2025	Martedì	09:00	2	Buttazzo	Neural networks for object tracking
4	12/03/2025	Mercoledì	09:00	2	Buttazzo	Trustworthy AI
5	18/03/2025	Martedì	09:00	2	Nesti	Adversarial attacks and defenses
6	19/03/2025	Mercoledì	09:00	2	Nesti	Real-world attacks and defenses
7	25/03/2025	Martedì	09:00	2	Rossolini	Explainable and Interpretable AI
8	26/03/2025	Mercoledì	09:00	2	Rossolini	Anomaly and out-of-distribution detection methods
9	01/04/2025	Martedì	09:00	2	Rossolini	Domain generalization and domain adaptation
10	02/04/2025	Mercoledì	09:00	2	Rossolini	Attention mechanisms in computer vision

20

Neural Networks and Deep Learning - 2025 Implementation issues						Online lectures on Teams
#	Date	Day	Time	hours	Teacher	Topic
1	08/04/2025	Martedì	09:00	3	Buttazzo	Implementing NN in C. Implementations of RL models.
2	09/04/2025	Mercoledì	09:00	3	Buttazzo	Implementations of multi-layer networks
3	15/04/2025	Martedì	09:00	2	Casini	Frameworks for training and inference of DNNs
4	16/04/2025	Mercoledì	09:00	2	Casini	Modeling DNNs in Tensorflow and Pytorch
5	22/04/2025	Martedì	09:00	2	Casini	Functional components in autonomous driving
6	23/04/2025	Mercoledì	09:00	2	Casini	The Apollo framework for autonomous driving
7	29/04/2025	Martedì	09:00	2	Nesti	Simulators for autonomous driving
8	30/04/2025	Mercoledì	09:00	2	Aromolo	GPU programming in CUDA
9	06/05/2025	Martedì	09:00	2	Biondi	Accelerating deep networks on GPGPUs
10	07/05/2025	Mercoledì	09:00	2	Biondi	DNN optimization for embedded platforms
11	13/05/2025	Martedì	09:00	2	Aromolo	The NVIDIA TensorRT framework
12	14/05/2025	Mercoledì	09:00	2	Aromolo	The NVIDIA TensorRT framework - advanced topics
13	20/05/2025	Martedì	09:00	2	Biondi	Accelerating DNNs on FPGA
14	21/05/2025	Mercoledì	09:00	2	Aromolo	The Xilinx Deep Processing Unit (DPU)

30