



Taller avanzado Deep Learning

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Enlaces para el taller

Repo github pedroconcejero/NST:

https://github.com/pedroconcejero/neuro_style_transfer_with_keras

Instalación y tutoriales Keras (Rstudio):

<https://keras.rstudio.com/>

Libro “Deep Learning with R”:

<https://www.manning.com/books/deep-learning-with-r>

Repo github deep-learning-with-r-notebooks:

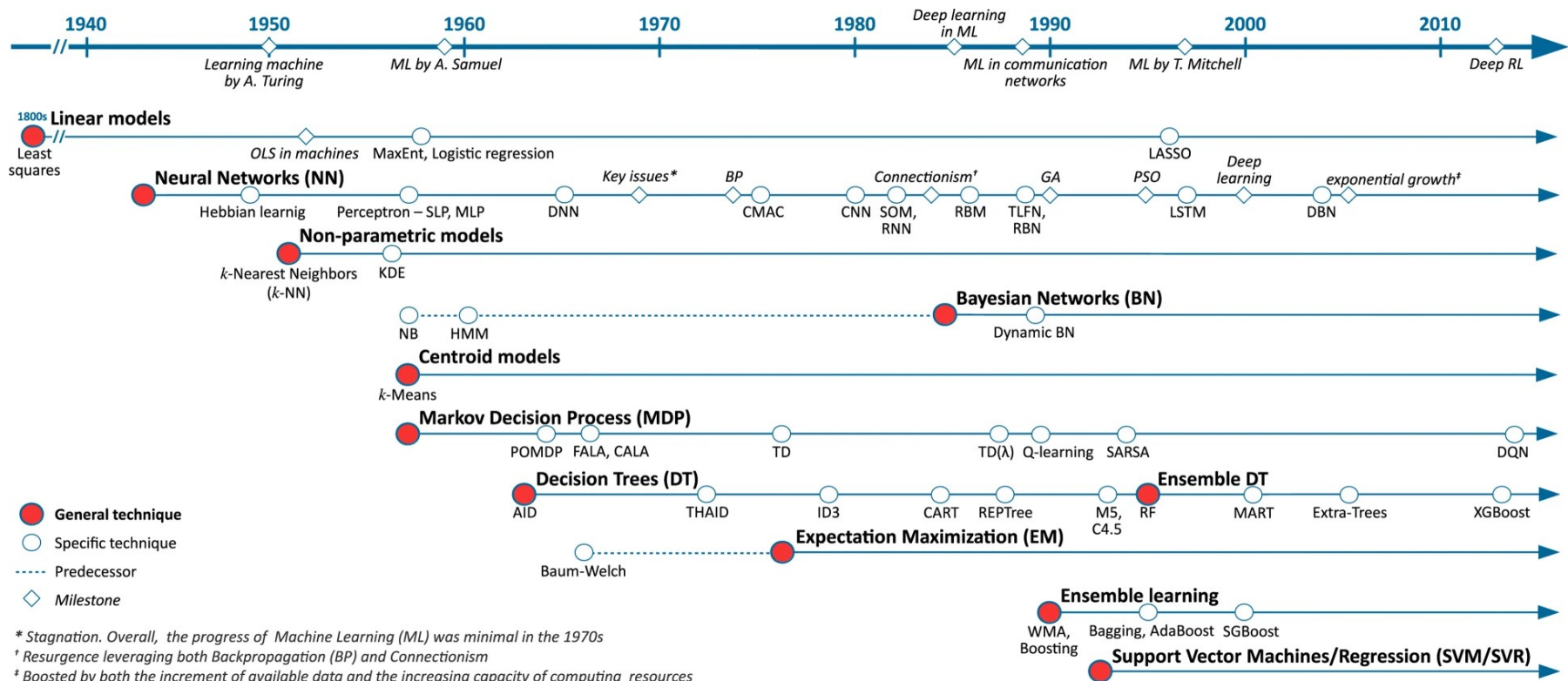
<https://github.com/jjallaire/deep-learning-with-r-notebooks>

Gatys et al. (2015): A Neural Algorithm of Artistic Style:

<https://arxiv.org/abs/1508.06576>

“Historia” del Machine Learning

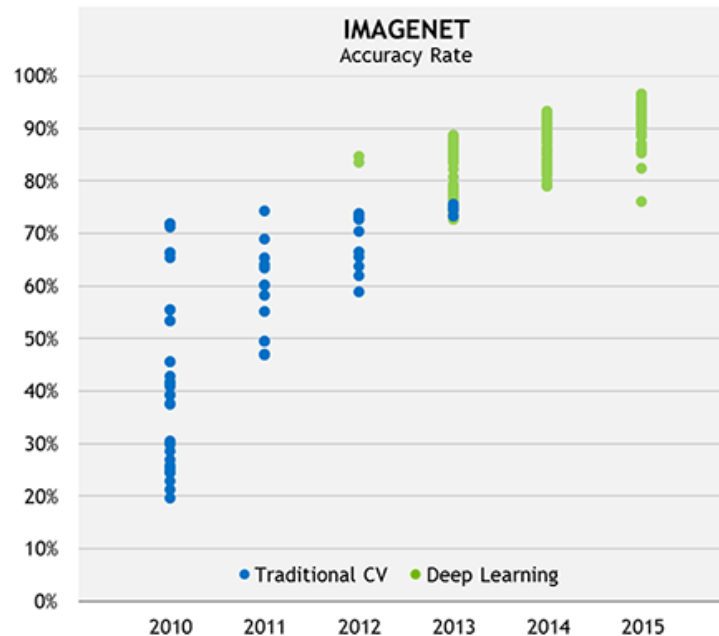
<https://jisajournal.springeropen.com/articles/10.1186/s13174-018-0087-2/figures/5>



Deep Learning - salto cualitativo

<https://blogs.nvidia.com/blog/2016/01/12/accelerating-ai-artificial-intelligence-gpus/>

2015: A MILESTONE YEAR IN COMPUTER SCIENCE



Deep Learning

Historia del deep learning 2012-2019:

<https://towardsdatascience.com/milestones-of-deep-learning-1aaa9aef5b18>

2019:

<https://towardsdatascience.com/14-deep-learning-uses-that-blasted-me-away-2019-206a5271d98>

¿Qué es lo que ha hecho de DL la tecnología más demandada en actualidad?

opensource software: libraries - TensorFlow, PyTorch...

widely available hardware (GPU's)

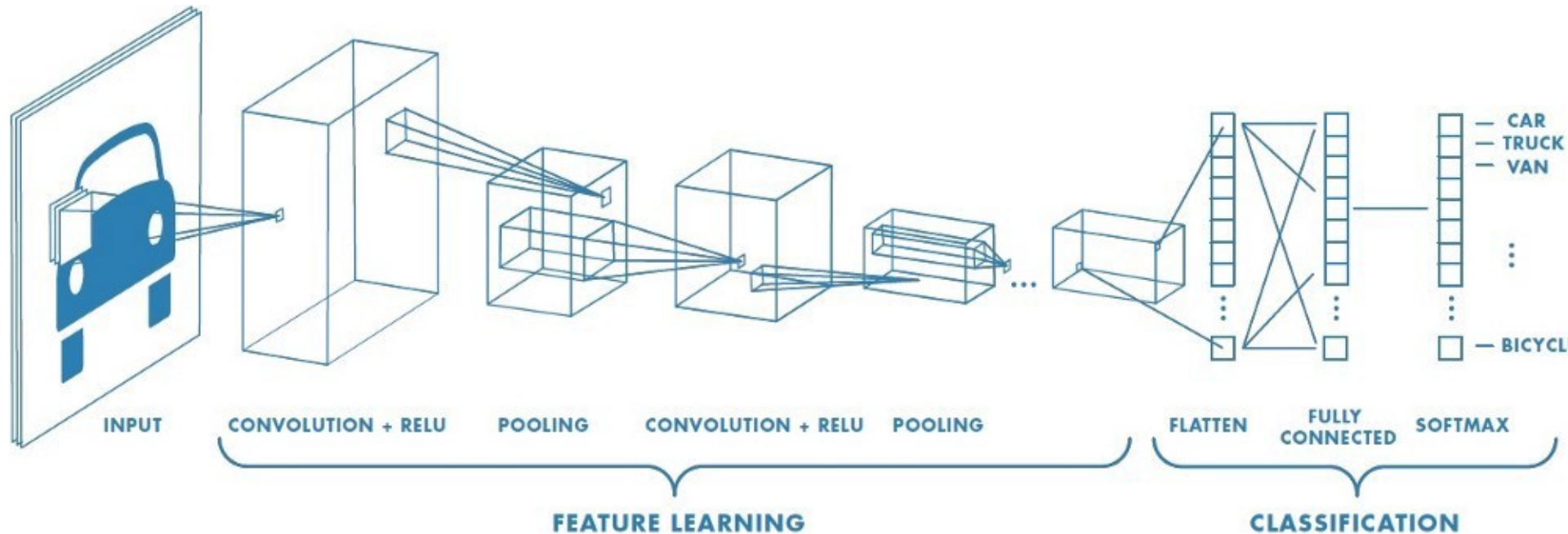
and most most importantly: shared training datasets and standardized evaluation methodologies:

<https://en.wikipedia.org/wiki/ImageNet>

https://en.wikipedia.org/wiki/MNIST_database

https://github.com/Matuzas77/MNIST-0.17/blob/master/MNIST_final_solution.ipynb

Deep Learning



Deep Learning

<http://web.eecs.umich.edu/~honglak/icml09-ConvolutionalDeepBeliefNetworks.pdf>

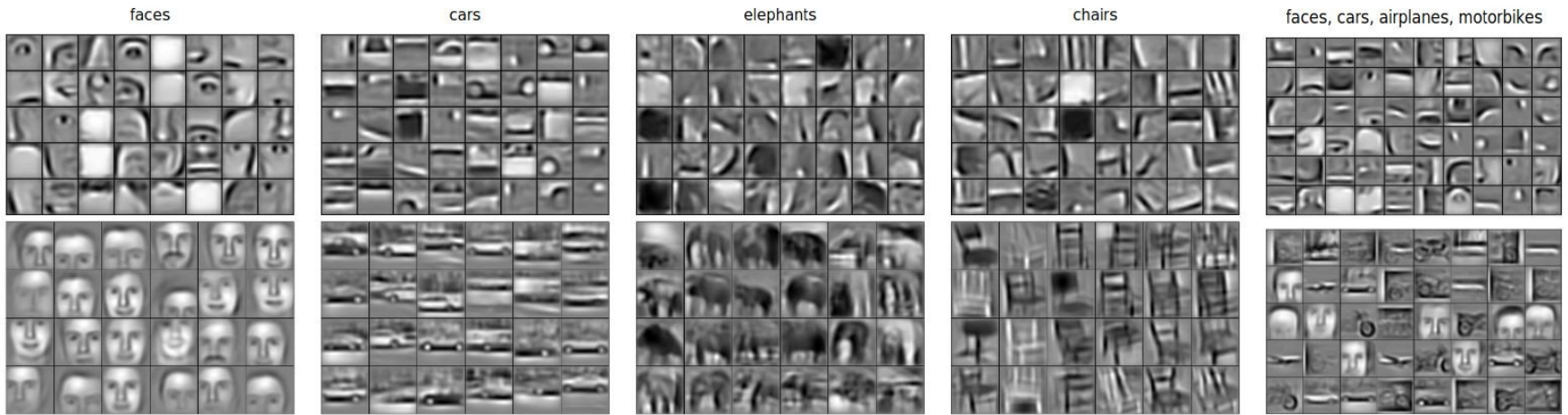
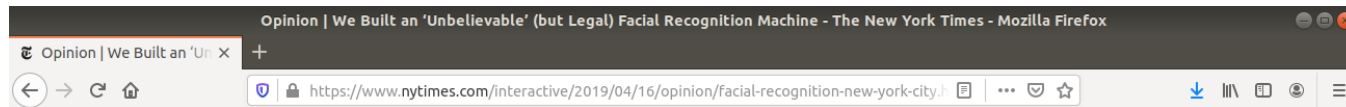


Figure 3. Columns 1-4: the second layer bases (top) and the third layer bases (bottom) learned from specific object categories. Column 5: the second layer bases (top) and the third layer bases (bottom) learned from a mixture of four object categories (faces, cars, airplanes, motorbikes).

DL everywhere - and privacy?

<https://www.nytimes.com/interactive/2019/04/16/opinion/facial-recognition-new-york-city.html>



Opinion | **THE PRIVACY PROJECT**

We Built an 'Unbelievable' (but Legal) Facial Recognition Machine

By Sahil Chinoy

APRIL 16, 2019 Apr. 22, 2020 Apr. 22, 2020 Apr. 22, 2020 Apr. 22, 2020

Most people pass through some type of public space in their daily routine — sidewalks, roads, train stations. Thousands walk through Bryant Park every day. But we generally think that a detailed log of our location, and a list of the people we're with, is private. Facial recognition, applied to the web of cameras that already exists in most cities, is a threat to that privacy.

To demonstrate how easy it is to track people without their knowledge, we collected public images of people who worked near Bryant Park (available on their employers' websites, for the most part) and ran one day of footage through Amazon's commercial facial recognition service. Our system detected 2,750 faces from a nine-hour period (not necessarily unique people, since a person could be captured in



¡Gracias!

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