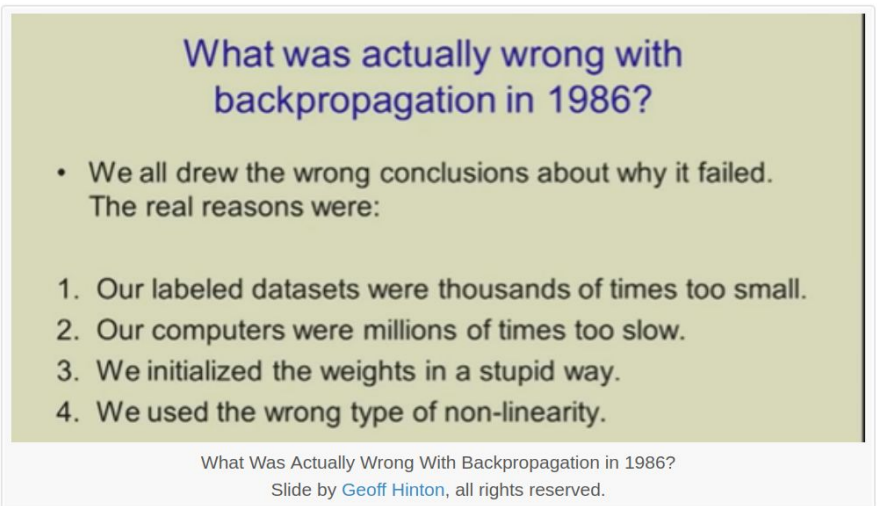
Deep Learning con **Pytorch**

Juan Pablo Morales
@juanpamf

¿Por qué el Deep Learning ahora?

¿Qué cambió?



What Was Actually Wrong With Backpropagation in 1986?
Slide by Geoff Hinton, all rights reserved.

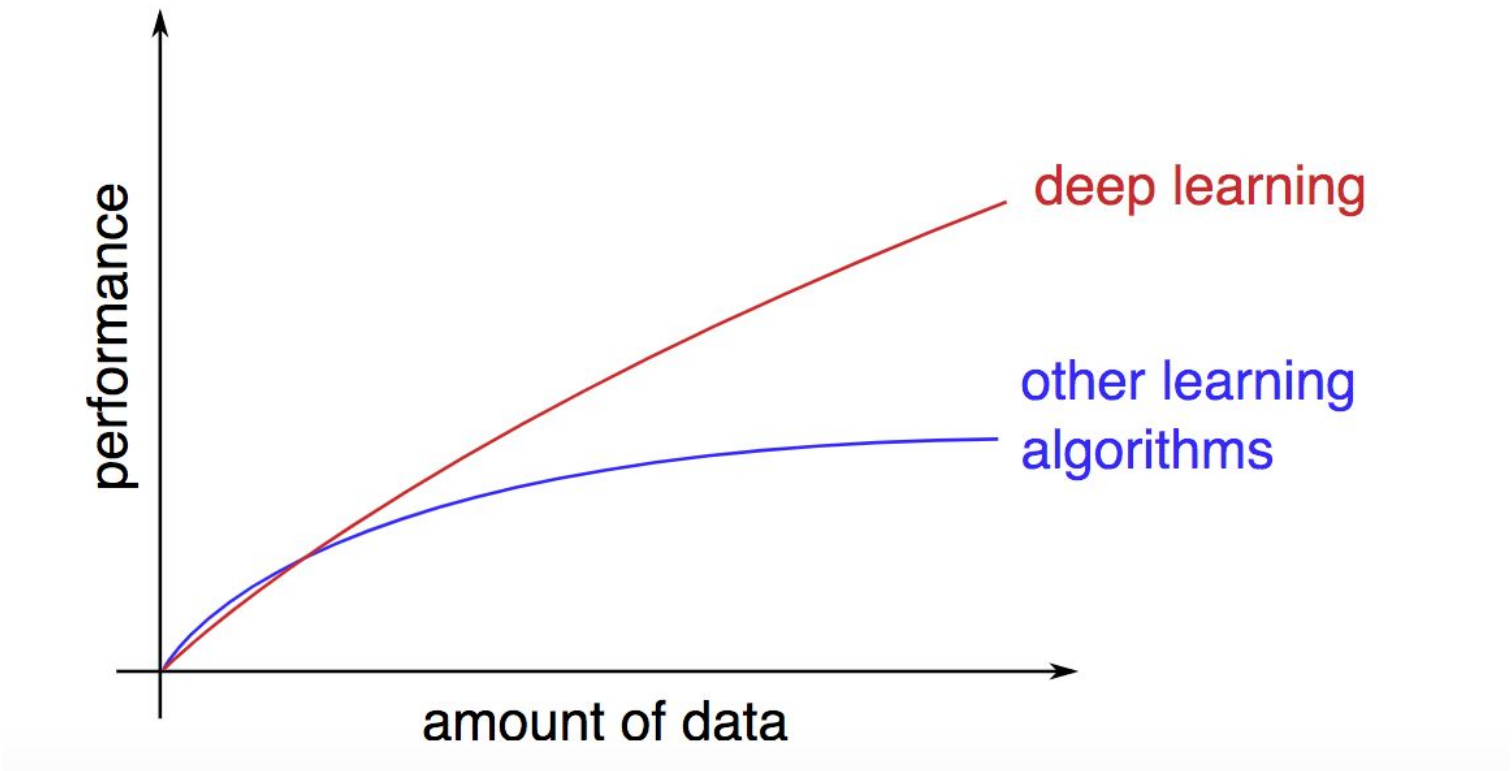
- Datasets labelizados de gran tamaño
- GPUs y hardware
- Mejoras en los algoritmos
- Software Open Source

Datasets Etiquetados o “labelizados”

Data-set	Year	Nb. images	Resolution	Nb. classes
MNIST	1998	6.0×10^4	28×28	10
NORB	2004	4.8×10^4	96×96	5
Caltech 101	2003	9.1×10^3	$\simeq 300 \times 200$	101
Caltech 256	2007	3.0×10^4	$\simeq 640 \times 480$	256
LFW	2007	1.3×10^4	250×250	–
CIFAR10	2009	6.0×10^4	32×32	10
PASCAL VOC	2012	2.1×10^4	$\simeq 500 \times 400$	20
MS-COCO	2015	2.0×10^5	$\simeq 640 \times 480$	91
ImageNet	2016	14.2×10^6	$\simeq 500 \times 400$	$21,841$
Cityscape	2016	25×10^3	$2,000 \times 1000$	30

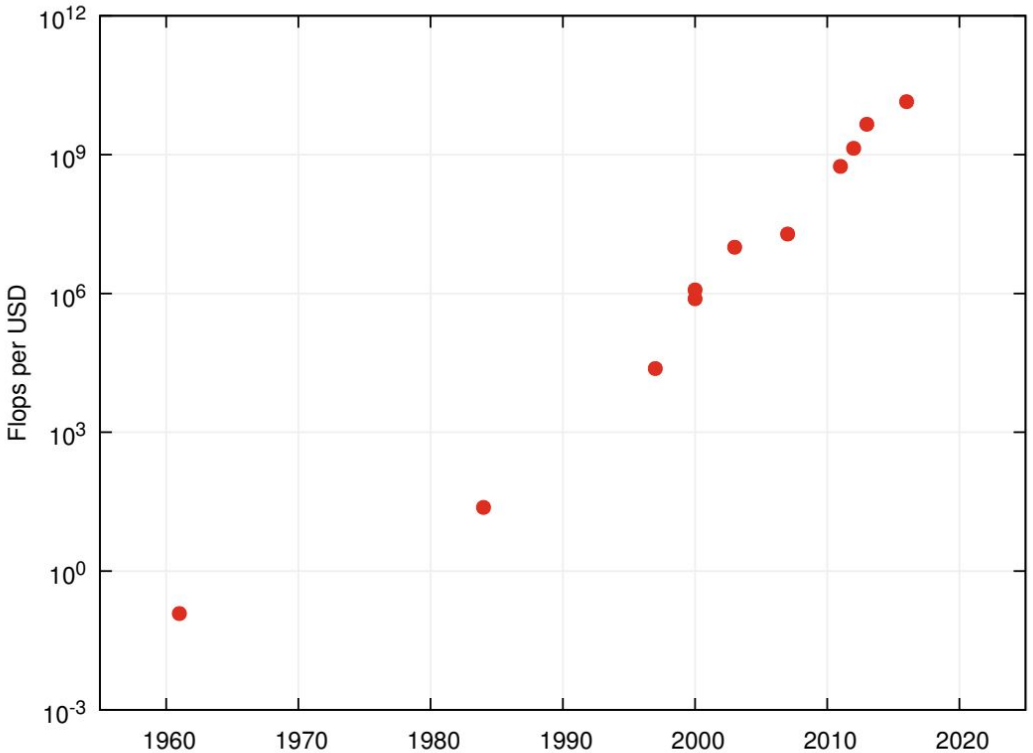
Crecimiento de los datasets abiertos

Datos Labelizados



Performance de los modelos profundos

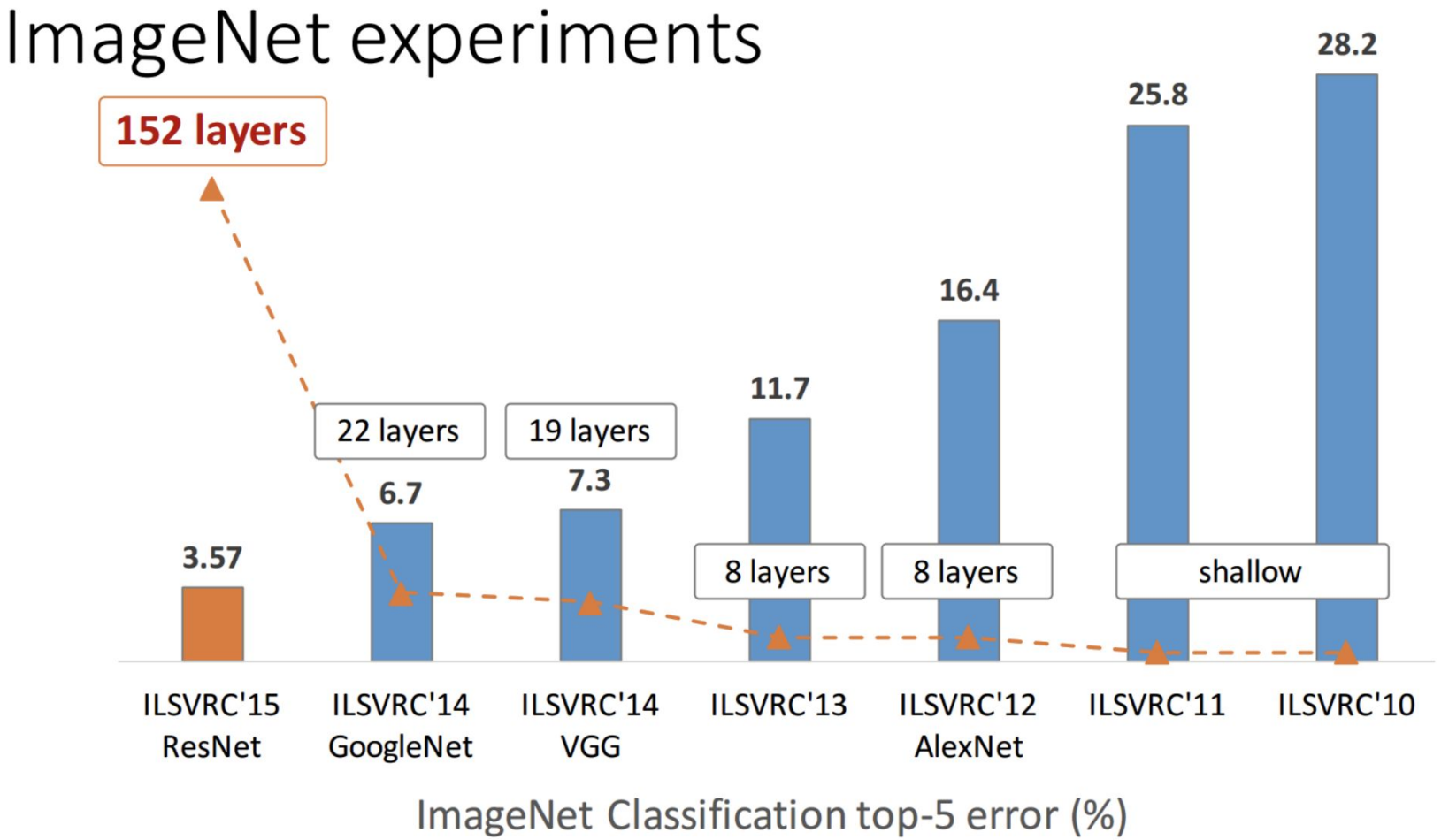
GPUs



(Wikipedia "FLOPS")

	TFlops (10^{12})	Price	GFlops per $
Intel i7-6700K	0.2	$344	0.6
AMD Radeon R-7 240	0.5	$55	9.1
NVIDIA GTX 750 Ti	1.3	$105	12.3
AMD RX 480	5.2	$239	21.6
NVIDIA GTX 1080	8.9	$699	12.7

Mejoras en los algoritmos



Software open-source