DEEP LEARNING НА ПАЛЬЦАХ

Что нужно знать

Чуть-чуть


```
my_string = "Hello, World!"
print(my_string)
```

Чуть-чуть
линейной алгебры

$$\begin{bmatrix} 2 & -3 & 1 \\ 5 & 4 & -2 \end{bmatrix} \times \begin{bmatrix} -7 & 5 \\ 2 & -1 \\ 4 & 3 \end{bmatrix} =$$

Чуть-чуть
матанализа

Например, градиент функции $\varphi(x,\ y,\ z) = 2x + 3y^2 - \sin z$ будет представлять собой:

$$\nabla\varphi = \left(\frac{\partial\varphi}{\partial x},\ \frac{\partial\varphi}{\partial y},\ \frac{\partial\varphi}{\partial z}\right) = (2,\ 6y,\ -\cos z).$$

Если не – сюда.

Семен Козлов

НГУ, выпуск 2005, ФФ
Сейчас – Instrumental
Раньше – Dropbox, Microsoft, Softlab-Nsk, еще всякое

Novosibirsk State University
*THE REAL SCIENCE

Юрий Бабуров
Павел Петроченко
Александр Гончаренко

CSC

Максим Вахрушев
Кирилл Бродт

ods.ai

CLOSED CIRCLES

Definition of ARTIFICIAL INTELLIGENCE

1 : a branch of computer science dealing with the simulation of intelligent behavior in computers

2 : the capability of a machine to imitate intelligent human behavior

Merriam-Webster

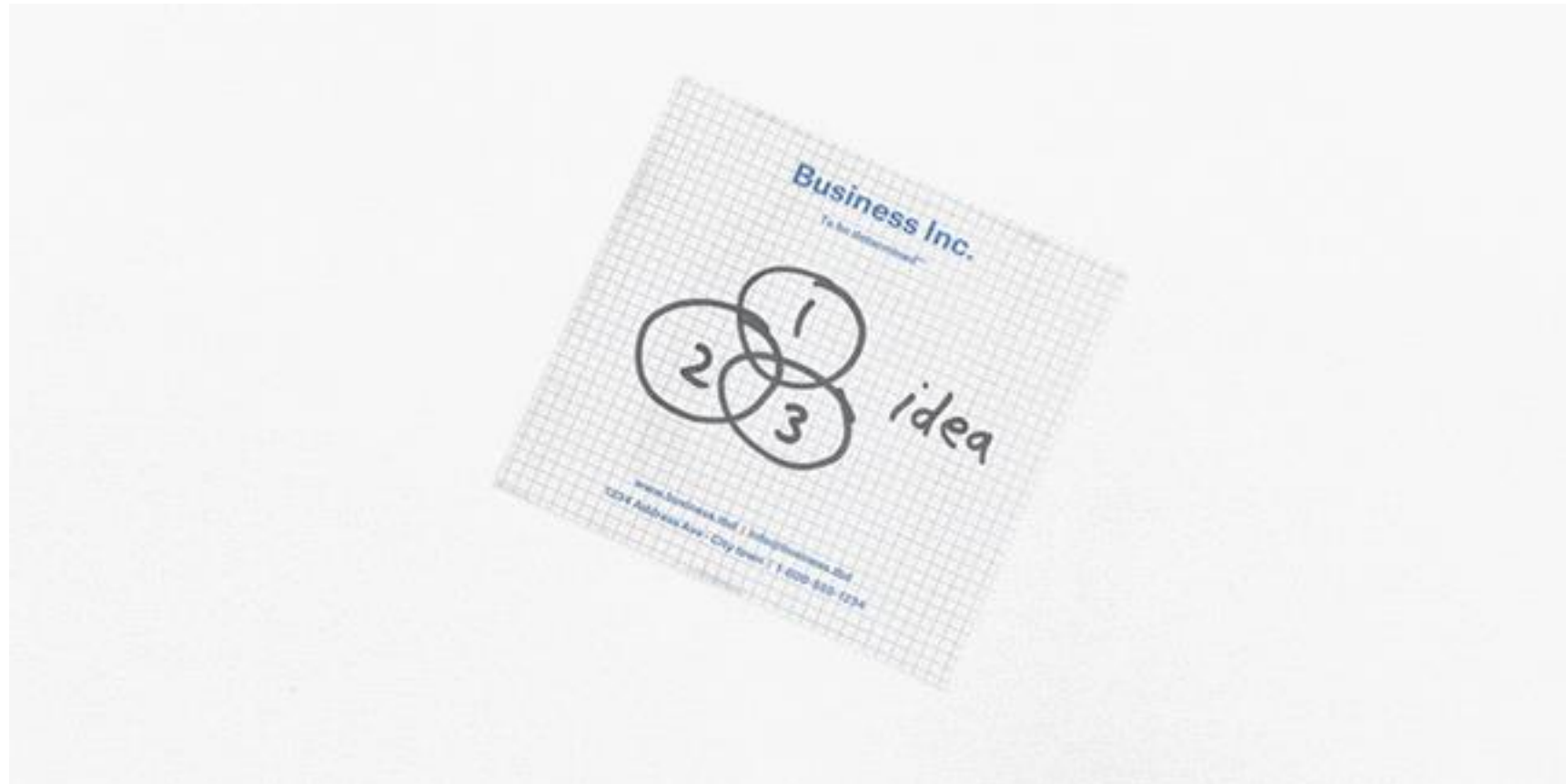
AI Effect

"Every time we figure out a piece of it, it stops being magical; we say, 'Oh, that's just a computation,'" laments Rodney Brooks, the director of MIT's Artificial Intelligence Laboratory. "We used to joke that AI means 'almost implemented.'"

It's Alive!, Wired, 2002


the rematch
1:57
1:58


REMOVE
INSERT
REMOVE
INSERT

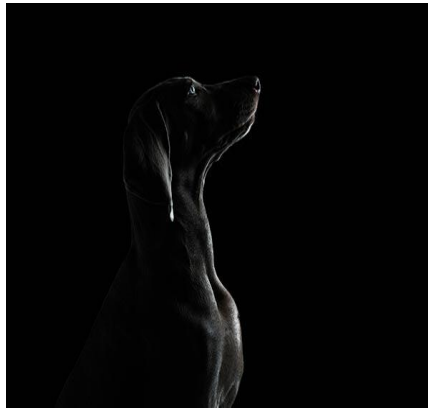


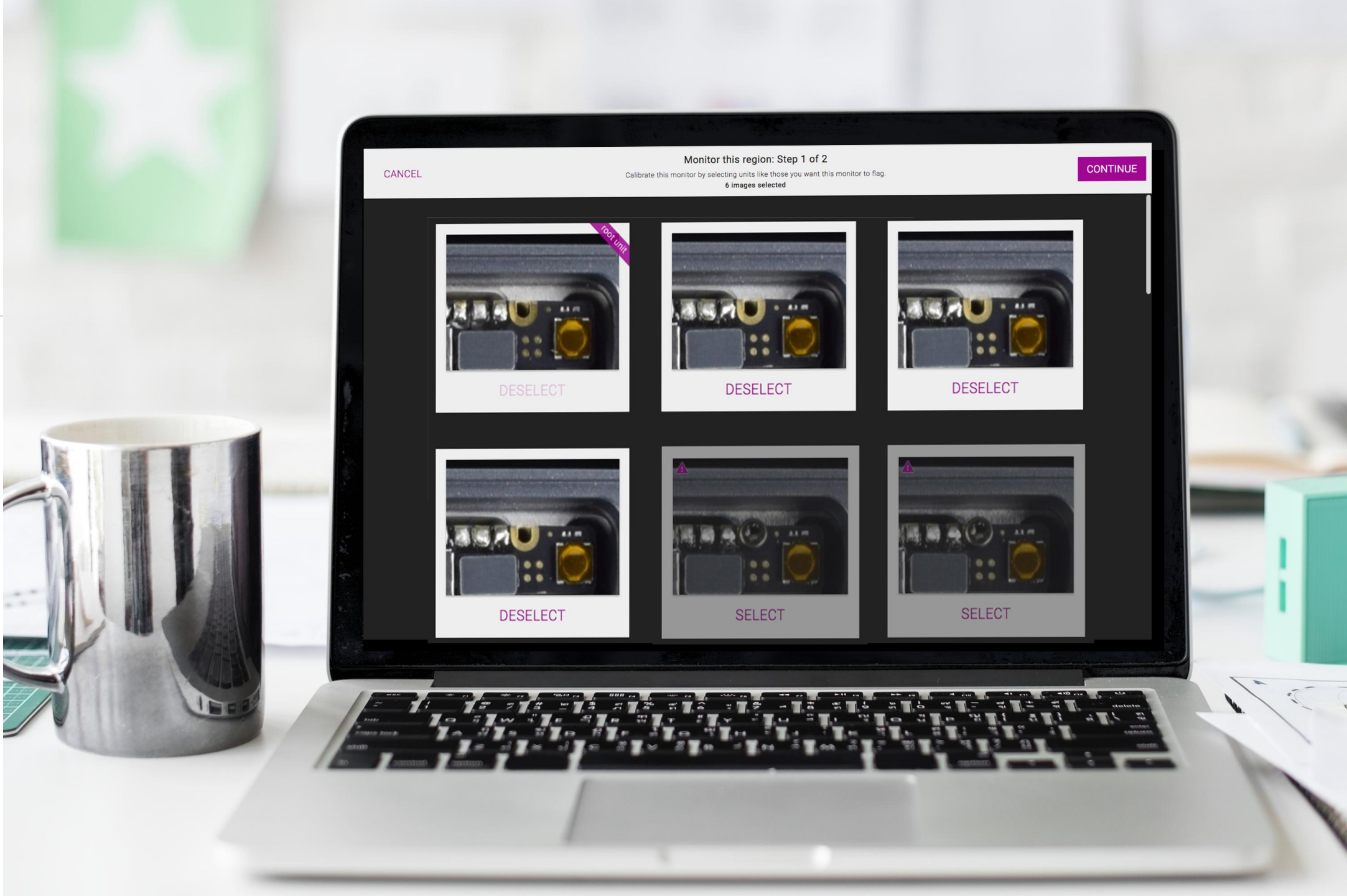
[Dropbox tech blog’17]

Кошечки или собачки





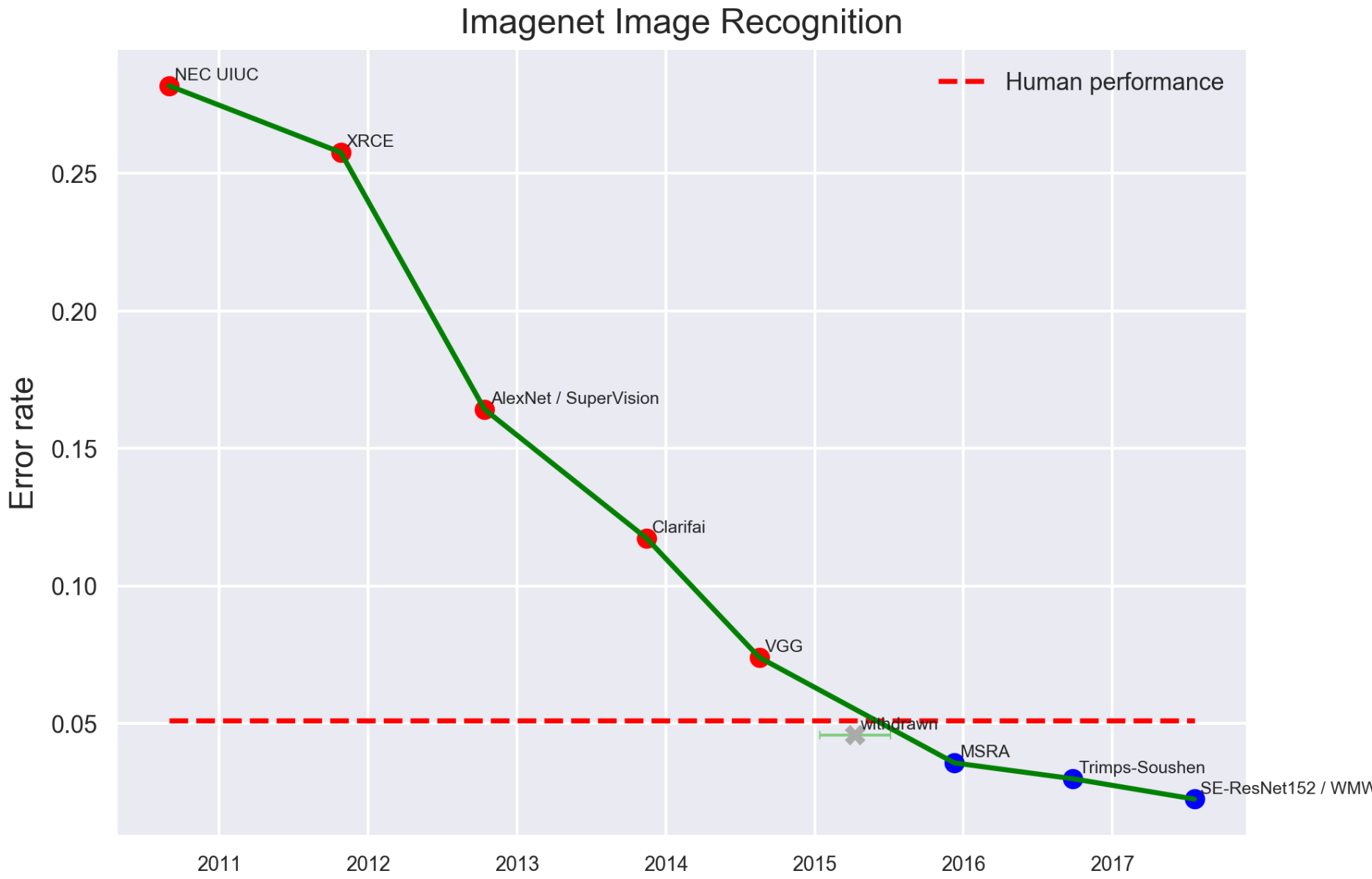


[Instrumental blog]

IMAGENET

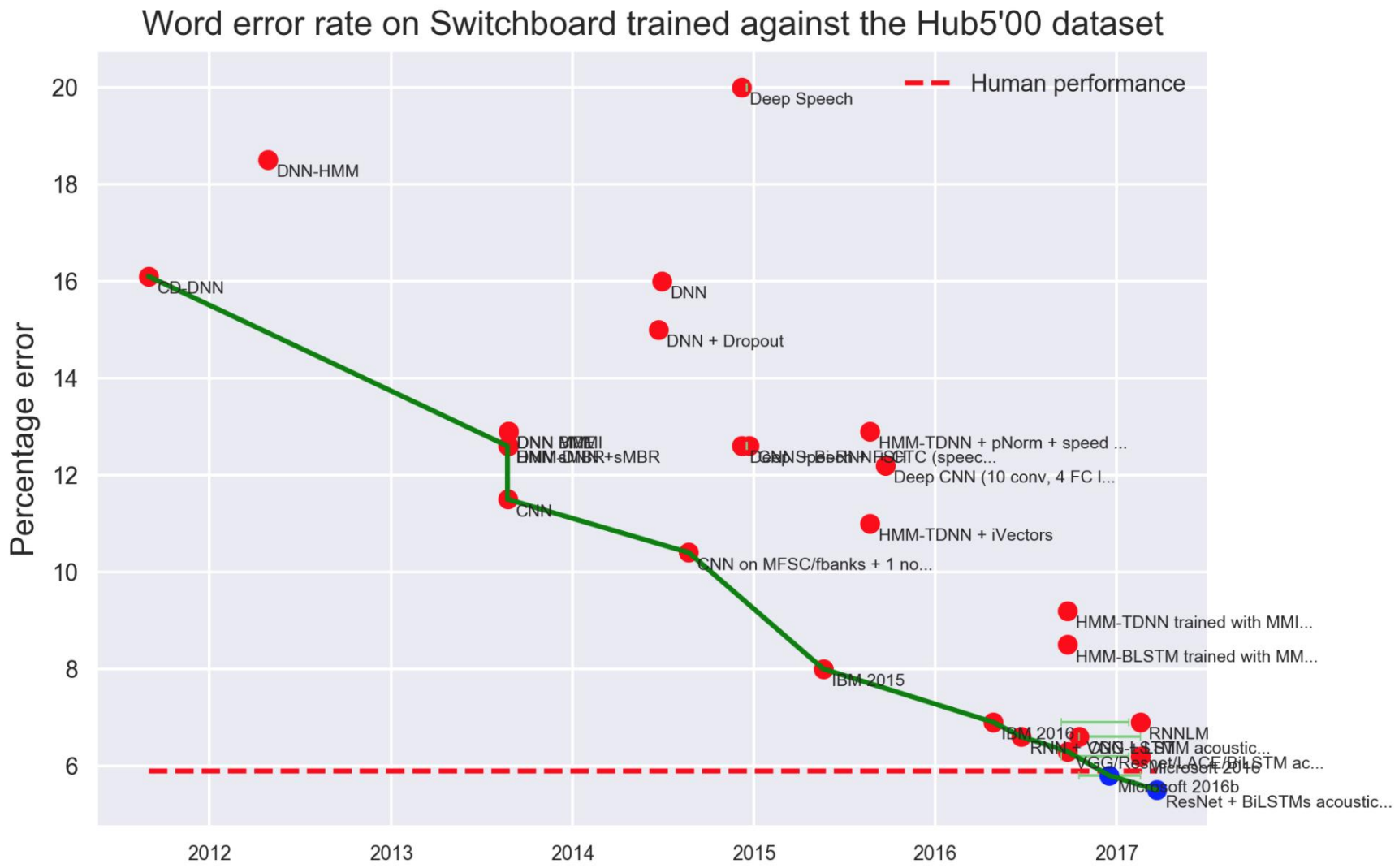
Source

Распознавание изображений

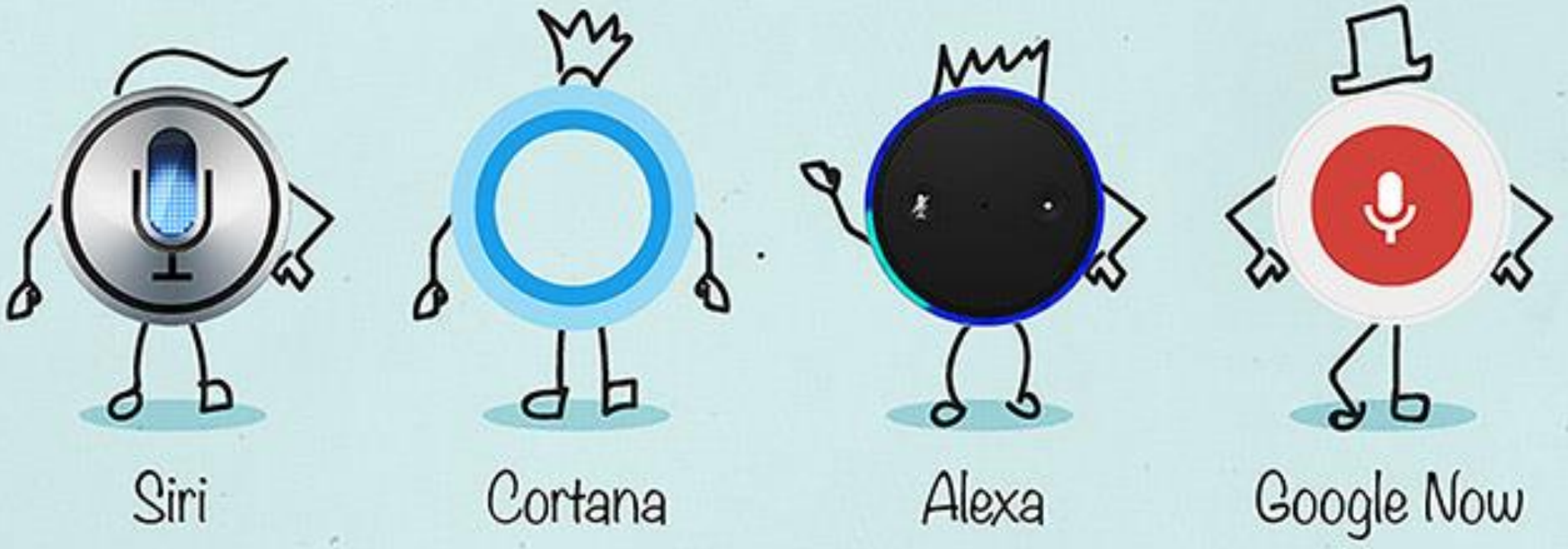


https://www.eff.org/ai/metrics

Распознавание речи



https://www.eff.org/ai/metrics



GWEN SUNG/CNNMONEY

CNN Money

Машинный перевод

Kilimanjaro is 19,710 feet of the mountain covered with snow, and it is said that the highest mountain in Africa. Top of the west, “Ngaje Ngai” in the Maasai language, has been referred to as the house of God. The top close to the west, there is a dry, frozen carcass of a leopard. Whether the leopard had what the demand at that altitude, there is no that nobody explained.

Kilimanjaro is a mountain of 19,710 feet covered with snow and is said to be the highest mountain in Africa. The summit of the west is called “Ngaje Ngai” in Masai, the house of God. Near the top of the west there is a dry and frozen dead body of leopard. No one has ever explained what leopard wanted at that altitude.

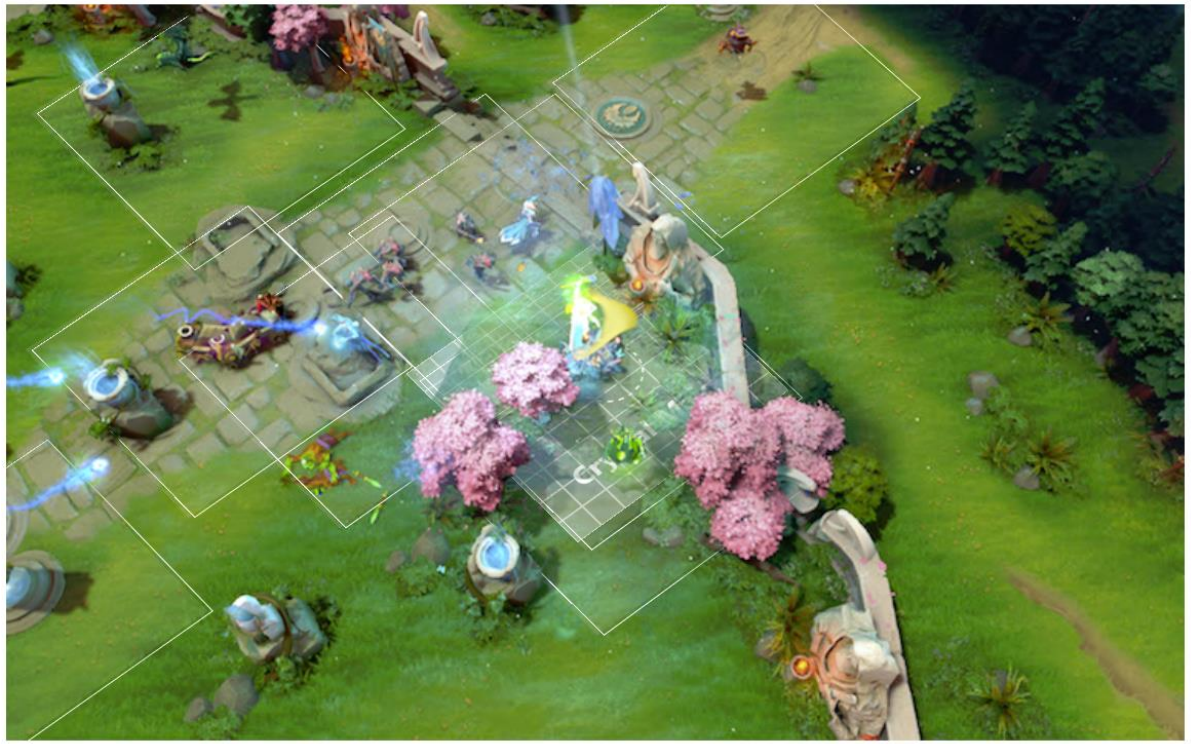
https://www.nytimes.com/2016/12/14/magazine/the-great-ai-awakening.html

Web search

https://m.habrahabr.ru/company/yandex/blog/336094/

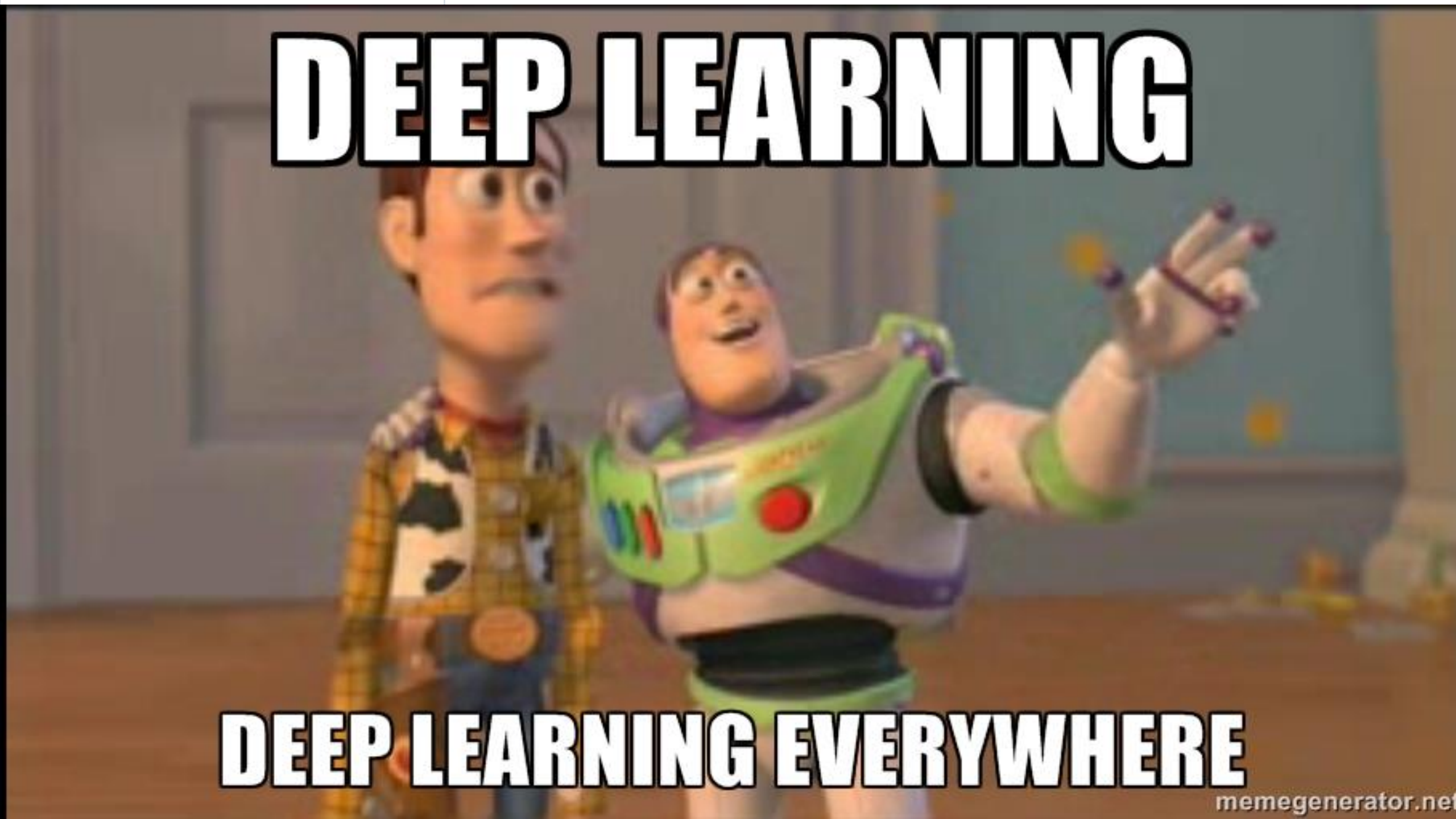
Обучение с подкреплением

Ура, дожили!!!



OpenAI Five

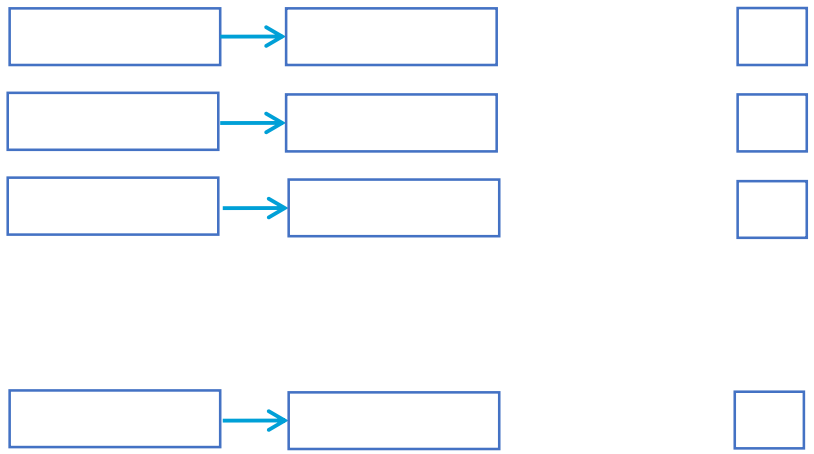
AlphaStar

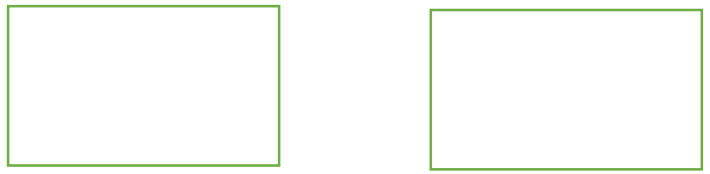

DEEP LEARNING
DEEP LEARNING EVERYWHERE
memegenerator.net

Машинное обучение
Machine Learning

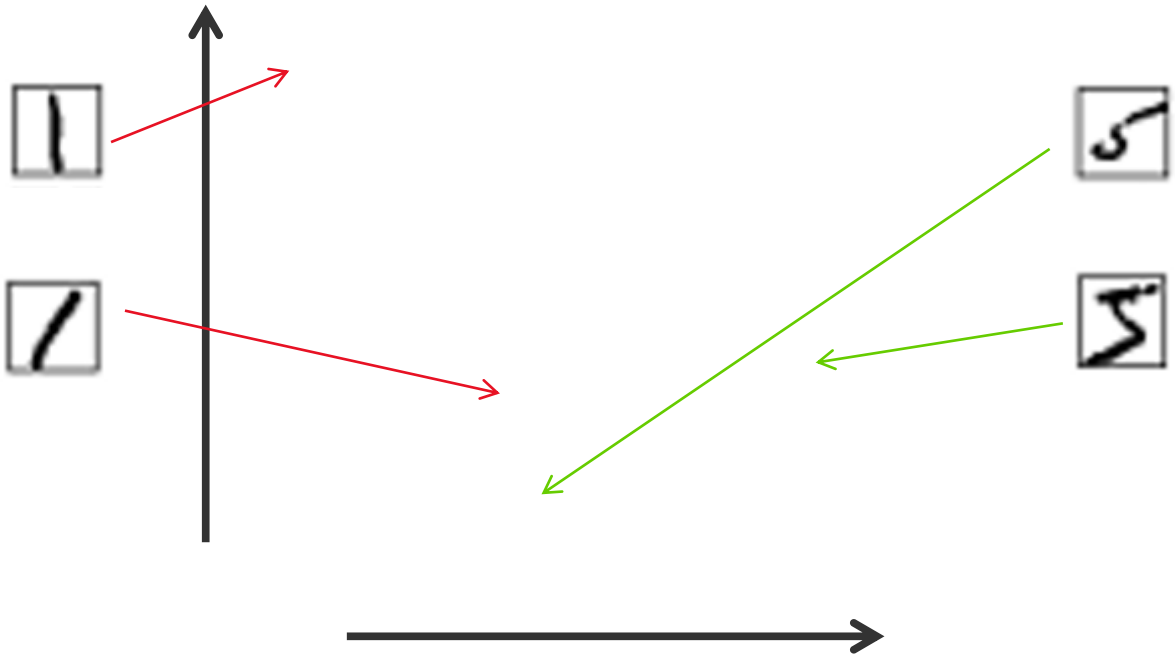
Machine learning is a field of computer science that gives computers the ability to learn without being explicitly programmed.[1]

Wikipedia

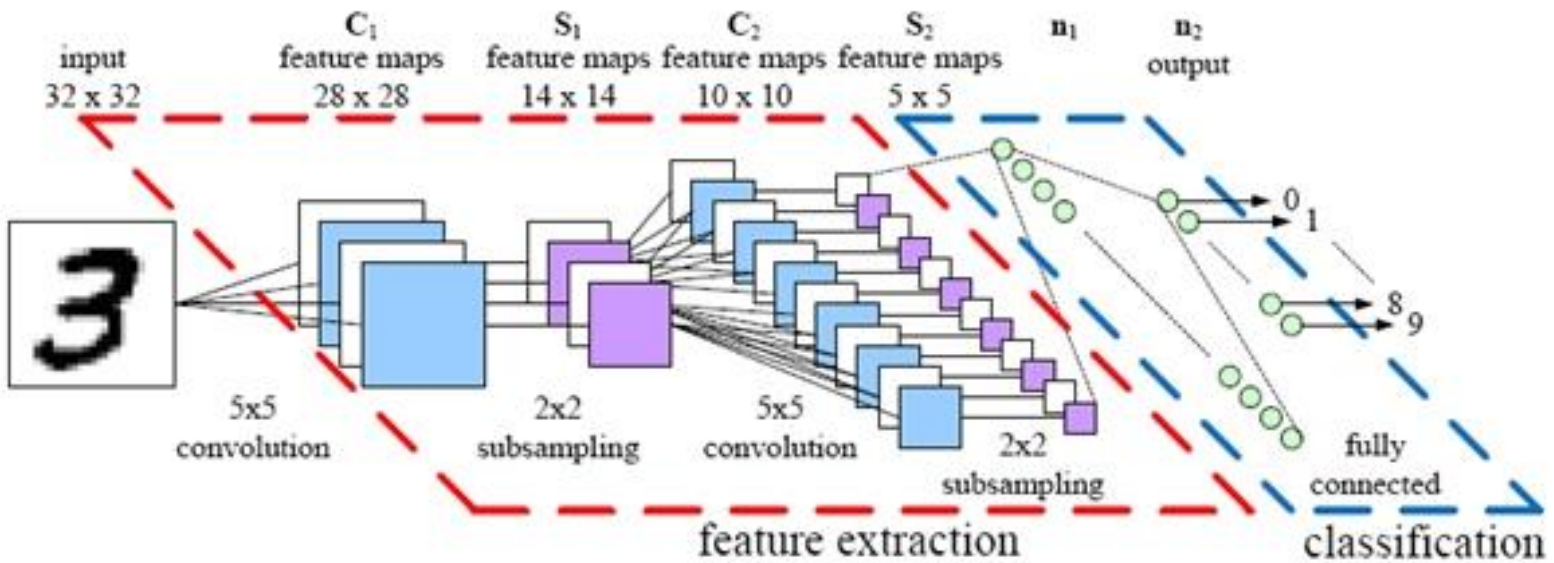




Признаки
Features



Глубокое обучение
Deep Learning



Source

MASSACHUSETTS INSTITUTE OF TECHNOLOGY

PROJECT MAC

Artificial Intelligence Group July 7, 1966
Vision Memo. No. 100.

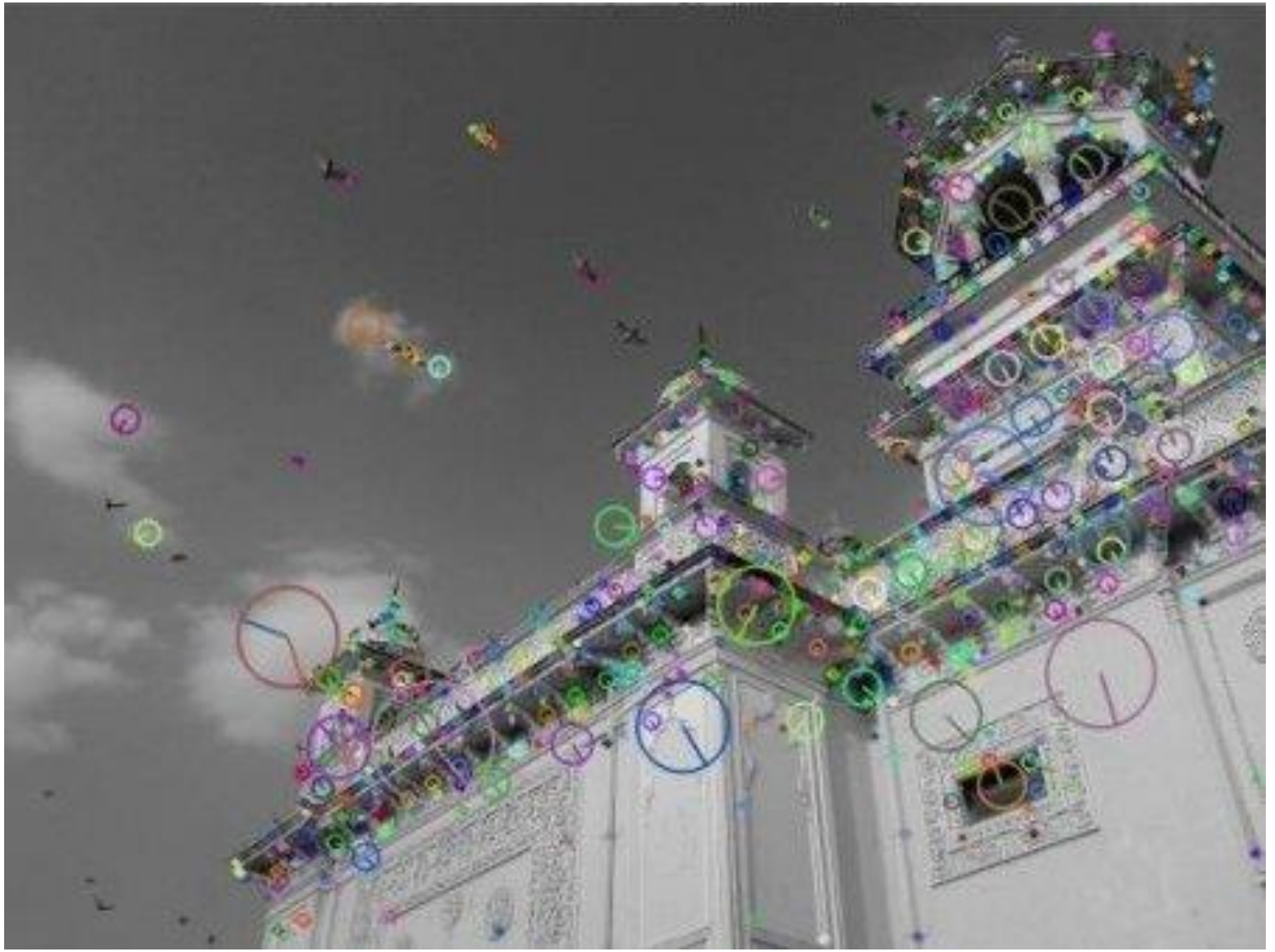
THE SUMMER VISION PROJECT

Seymour Papert

The summer vision project is an attempt to use our summer workers effectively in the construction of a significant part of a visual system. The particular task was chosen partly because it can be segmented into sub-problems which will allow individuals to work independently and yet participate in the construction of a system complex enough to be a real landmark in the development of "pattern recognition".

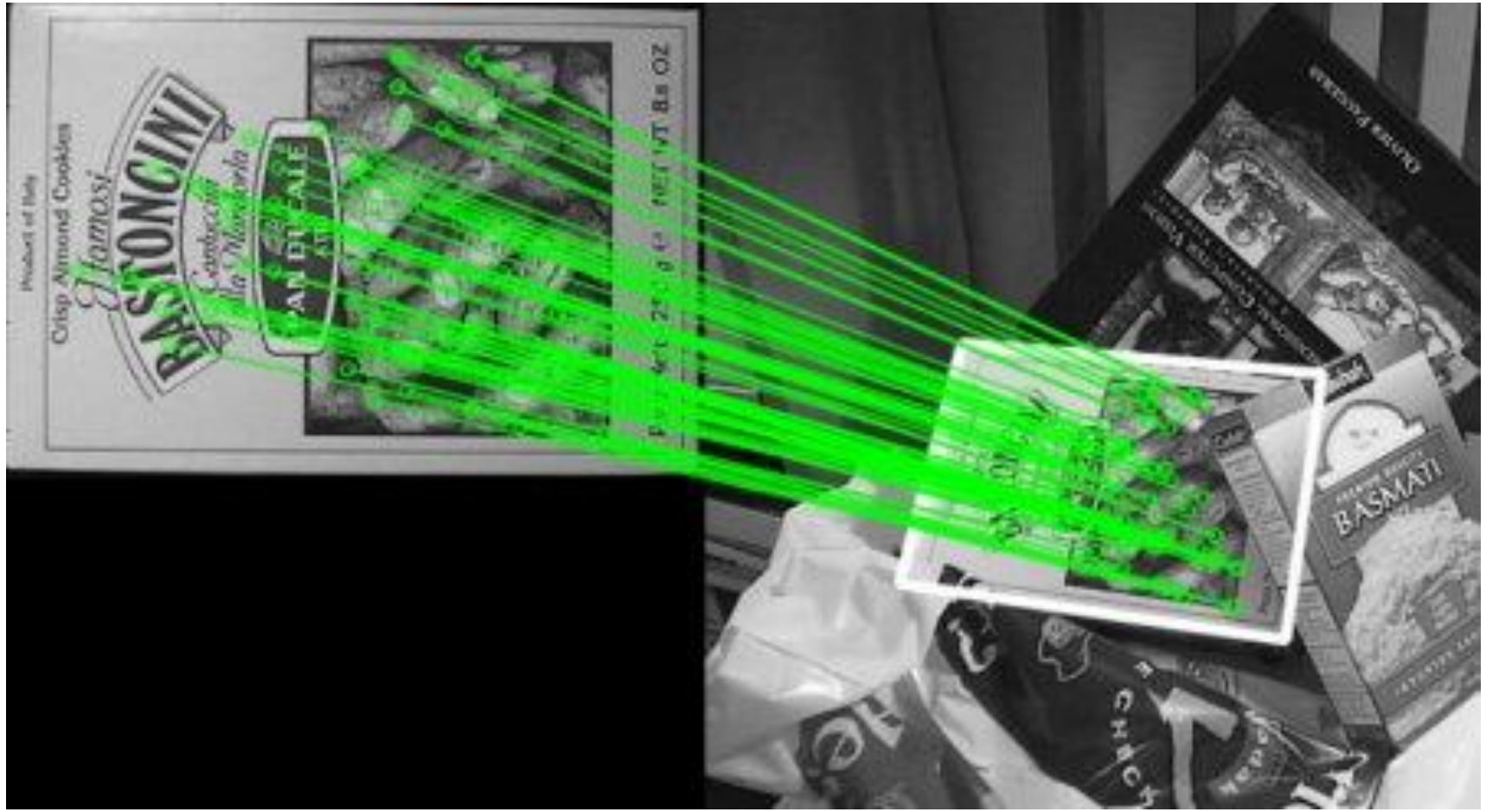
[The Summer Vision Project'1966]

Computer vision features - SIFT



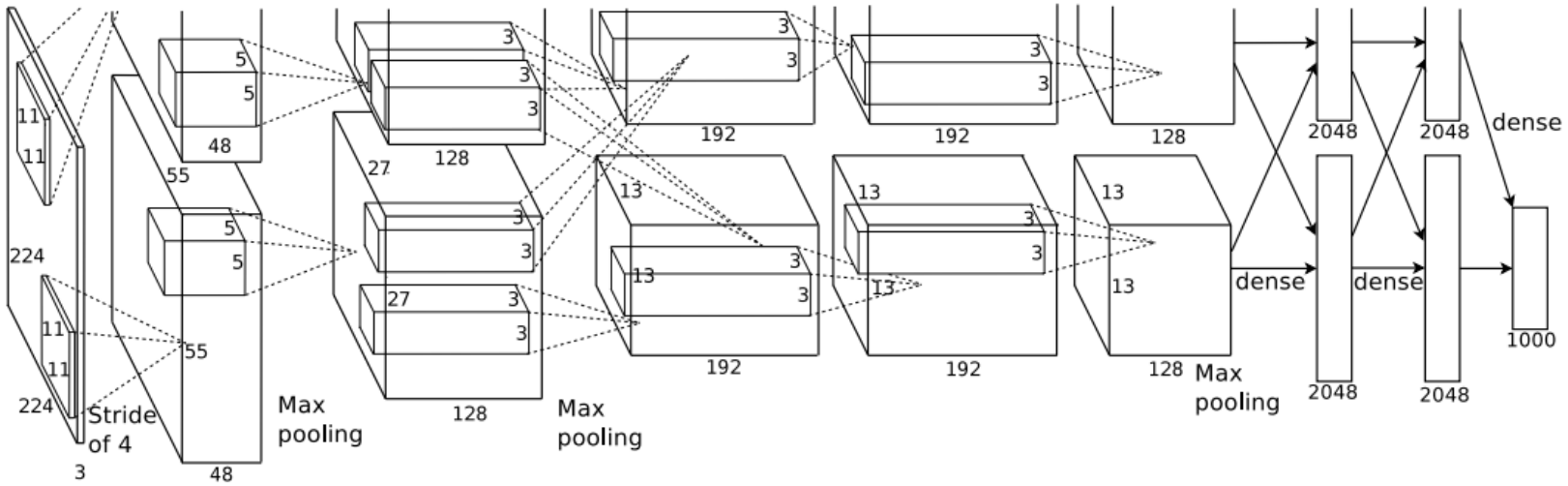
OpenCV Tutorial

Homography



[OpenCV Tutorial]

Convolutional Neural Networks AlexNet



В курсе мы дойдем где-то до состояния 2014-2015 года
…и коротко посмотрим на текущее состояние

[ImageNet Classification with Deep Convolutional Neural Network'2012]

О курсе

Компьютерное зрение

Computer vision

Обработка речи и естественного языка

Natural Language Processing (NLP), Speech Recognition

Обучение с подкреплением

Reinforcement learning

Что будет в курсе

В классе	**Онлайн**
6 заданий на Python	
Контрольная работа	Пока не придумали
Доклад о современной научной работе на выбор	Рекомендуем написать пост про какой-то пейпер!
Курсовой проект – основной вклад в оценку!	Рекомендуем поучаствовать в Kaggle

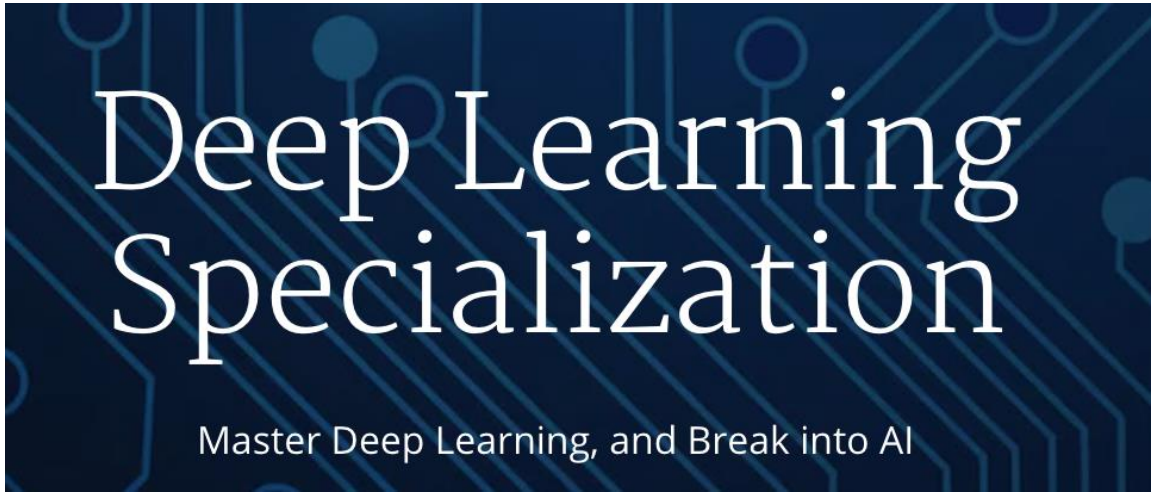
Другие ресурсы - онлайн-курсы

CS231n: Convolutional Neural Networks for Visual Recognition

cs231n.stanford.edu

CS224d: Deep Learning for Natural Language Processing

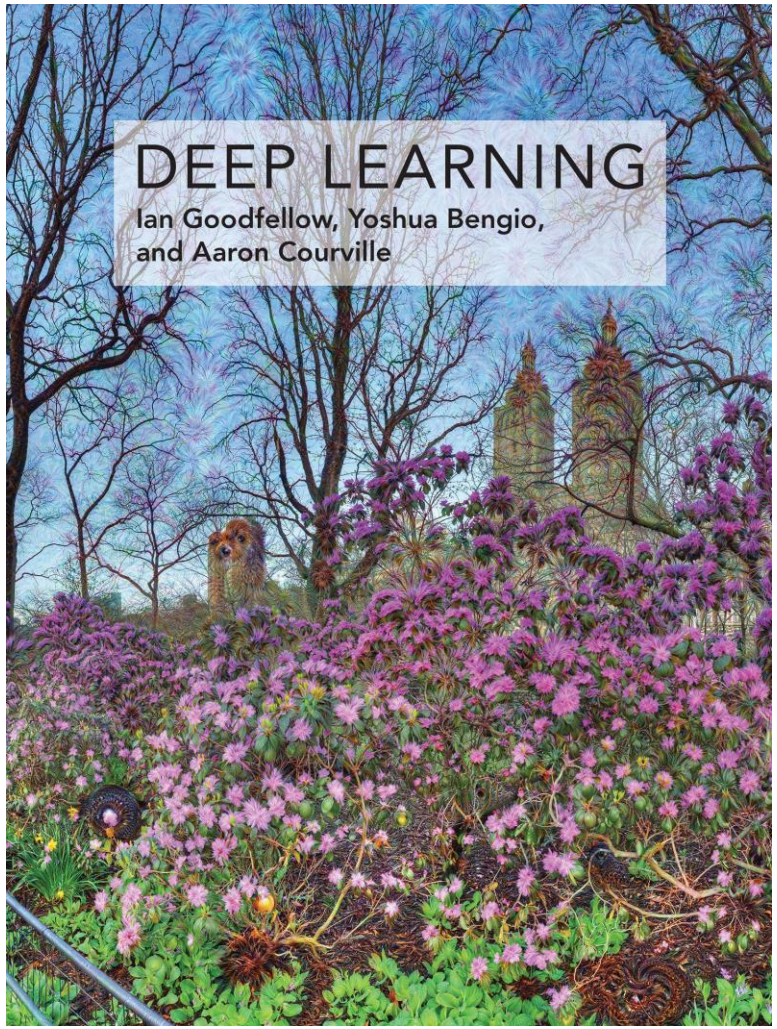
cs231n.stanford.edu



Coursera

fast.ai

Другие ресурсы - книги



deeplearningbook.org

ozon.ru

А поговорить?

Группа в Telegram

#dlcourse на ClosedCircles.com

#dlcourse_ai в ODS.ai