

# Schedule

State of the course address


Lesson 2 Review

Challenge

Notebook + resources

[madrid@saturdays.ai](mailto:madrid@saturdays.ai) - [@aisaturdayses](https://twitter.com/aisaturdayses)

# Sate of the course

- Lesson 1
  - Lesson 2
  - Split
    - Advanced: Speed up + Other course (RL,NLP, CV, ...)
    - Standard: Keep the pace + challenges
    - Both: Start thinking about the projects
- 

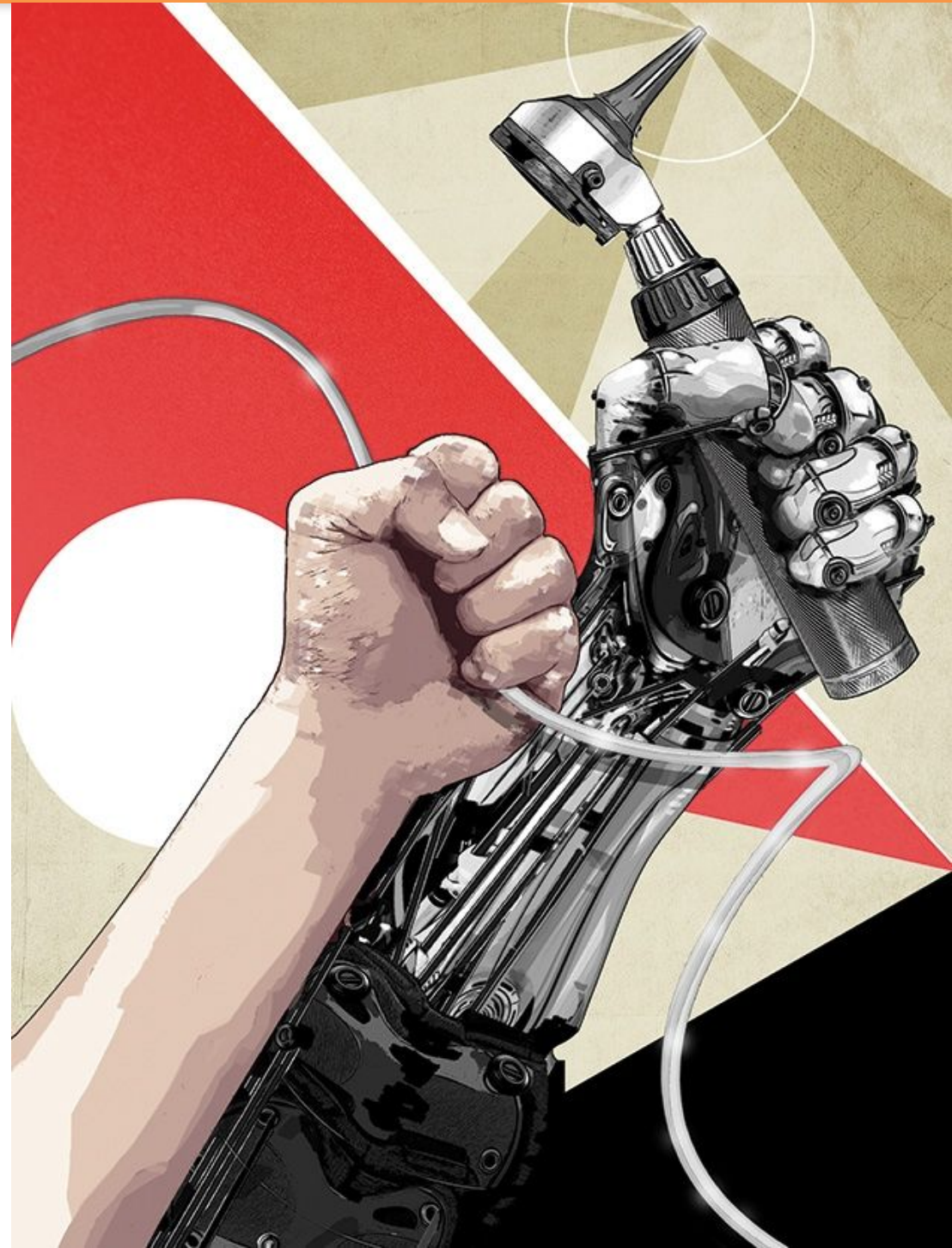
# Today!

Agenda:

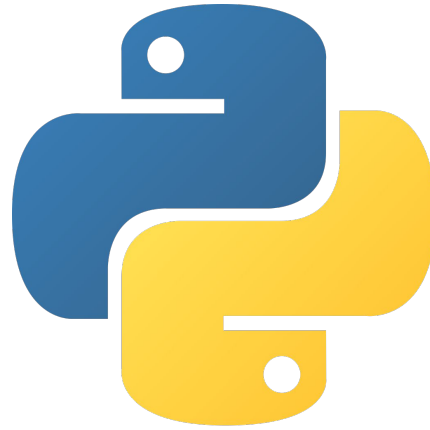
9:30h Deep Learning Lesson 1 + Work

11:30 Coffee break

12:00 Work



# Lesson 2 Tools



# Setup (deeplearning, Slack)

## Ultimate guide to setting up a Google Cloud machine for fast.ai course (part 1 version 3)

Latest: 12 Oct 2018 — This guide has been updated for the upcoming fast.ai part 1 v 3 course, which uses the latest fastai 1.0 library. As the VM image used in this guide is still experimental, this guide might continue to be updated over the next month or two.



How Khang

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Jan 3, 2018 · 8 min read



# Learners

# Learner : Data + Model + Error metric

**When starting building a model, pick a small architecture (resnet34 > resnet50 )**



14,197,122 images, 21841 synsets indexed


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## Start exploring here

 Numbers in brackets: (the number of synsets in the subtree )

-  [ImageNet 2011 Fall Release \(32326\)](#)
  - plant, flora, plant life (4486)
  - geological formation, formation (175)
  - natural object (1112)
  - sport, athletics (178)
  - artifact, artefact (10504)
  - fungus (308)
  - person, individual, someone, somebody (1000)
  - animal, animate being, beast, brute, creature, fauna (20400)

## Popular Synsets

### Animal

- fish
- bird
- mammal
- invertebrate

### Plant

- tree
- flower
- vegetable

### Activity

- sport

### Material

- fabric

### Instrumentation

- utensil
- appliance
- tool
- musical instrument

### Scene

- room
- geological formation

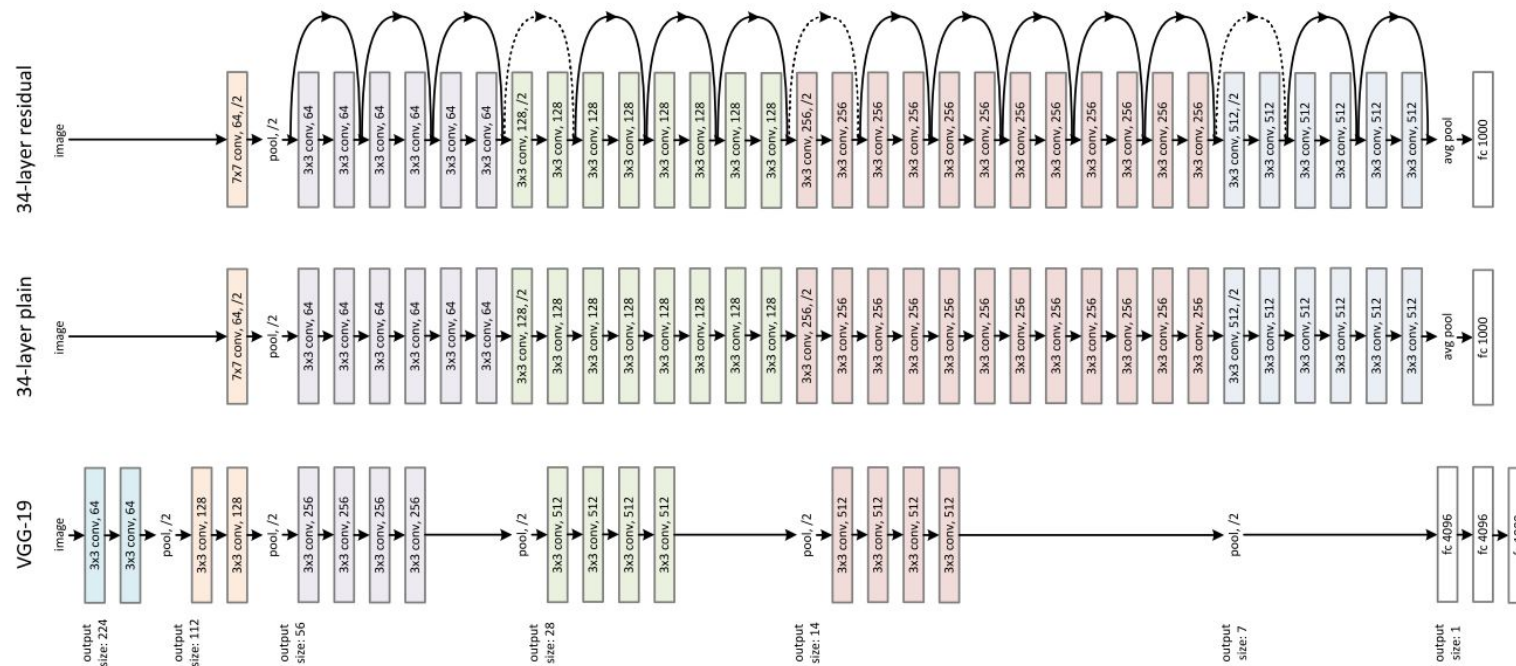
### Food

- beverage

<

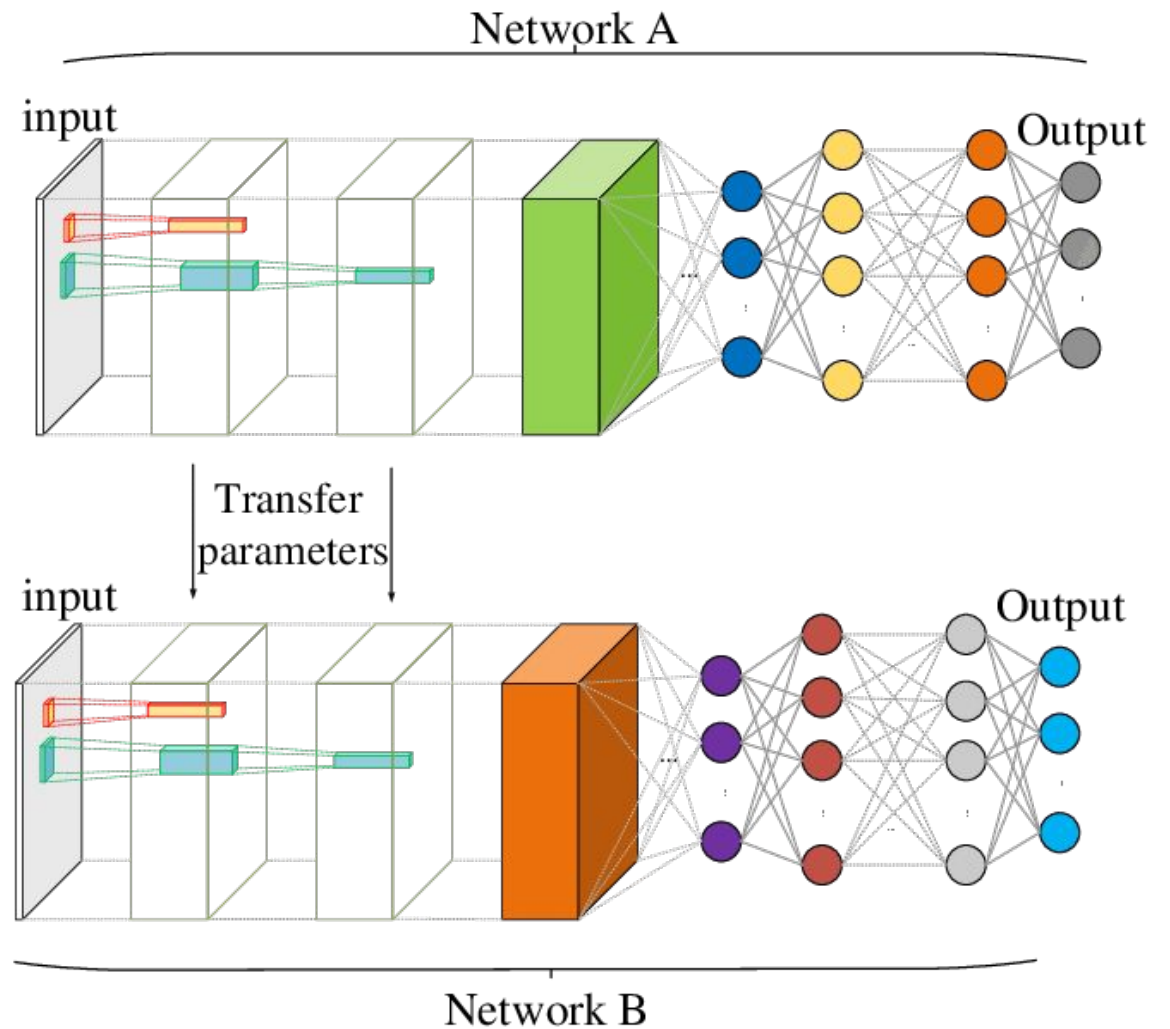
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© 2010 Stanford Vision Lab, Stanford University, Princeton University   support@image-net.org   [Copyright infringement](#)



# Transfer learning

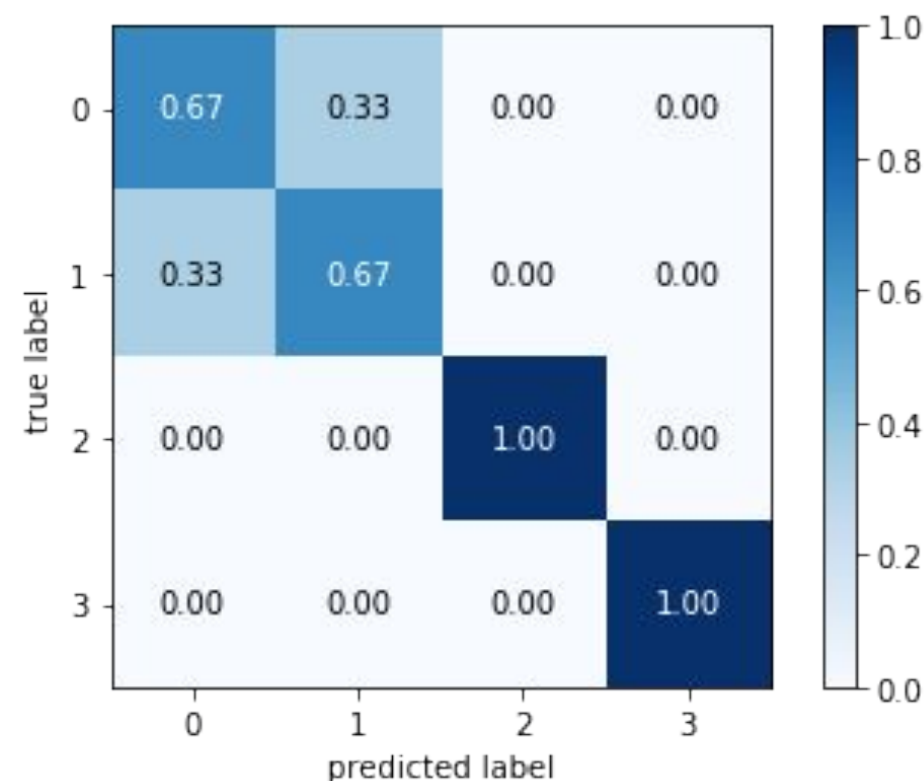
If it's already done, why not just use it?



# Deep Learning specifics

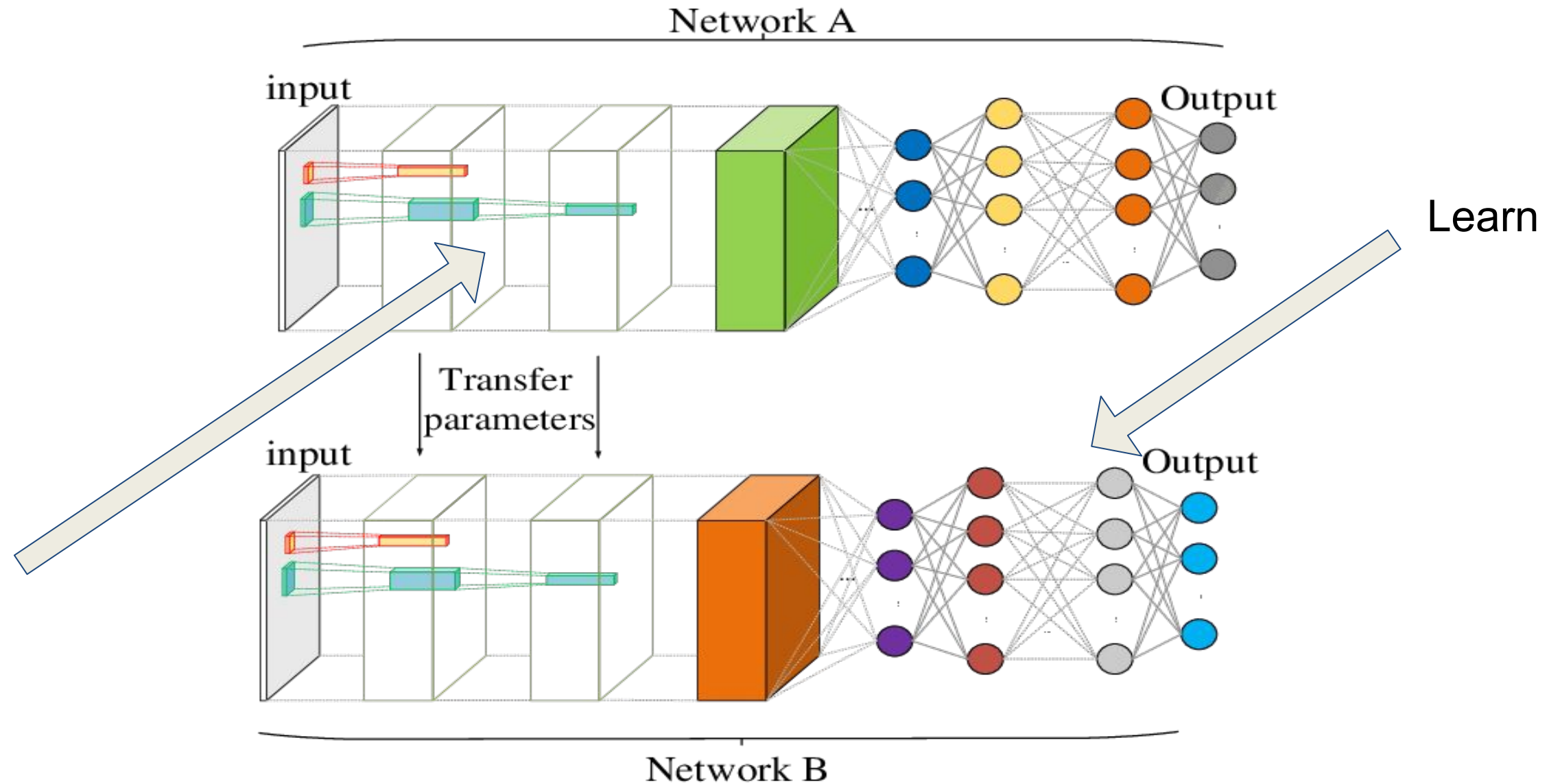
More Key points in Lesson 1:

- Careful with overfitting issues: learning vs memorizing
- Save the model (Auditors will love you for it)
- Where to run the model? Server vs edge
- Explore the input & output of the model
  - Garbage in, Garbage out





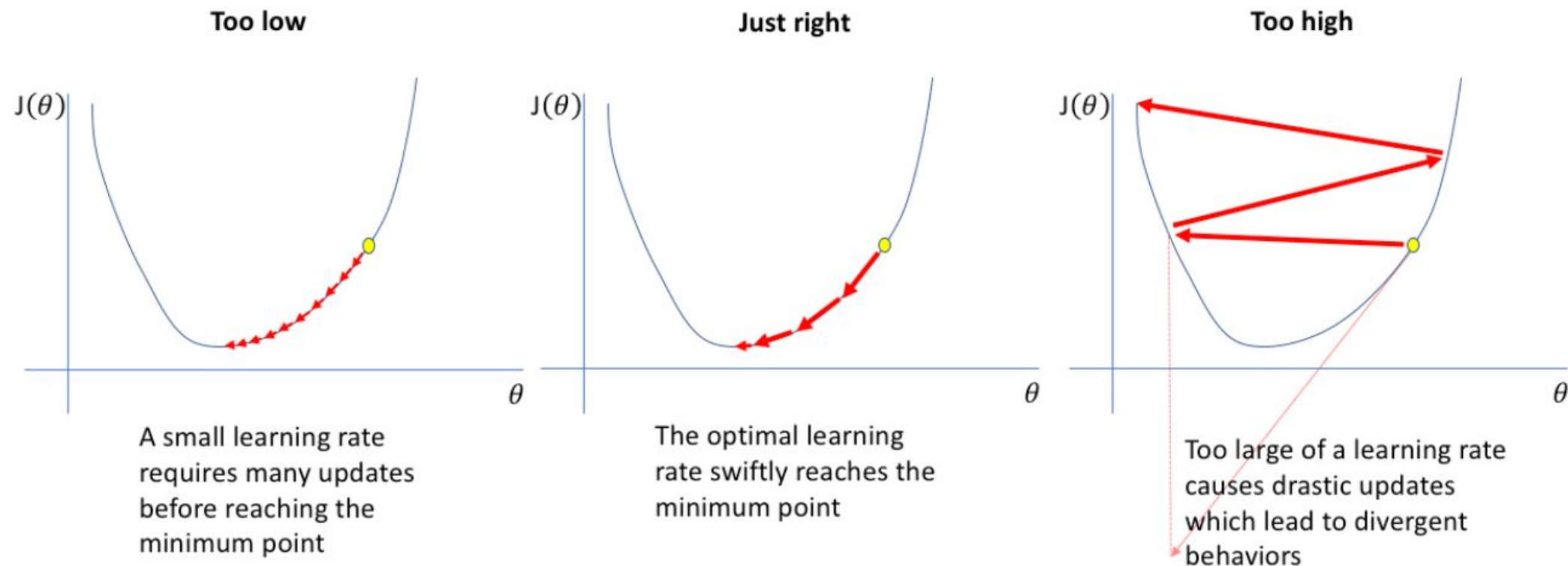
# Transfer learning 2



# Deep Learning specifics

Even More Key points in Lesson 1:

- The deeper the layer, deeper the complexity
- Adapt the learning rate to the task at hand



# Deep Learning specifics

Key points in Lesson 1-2:

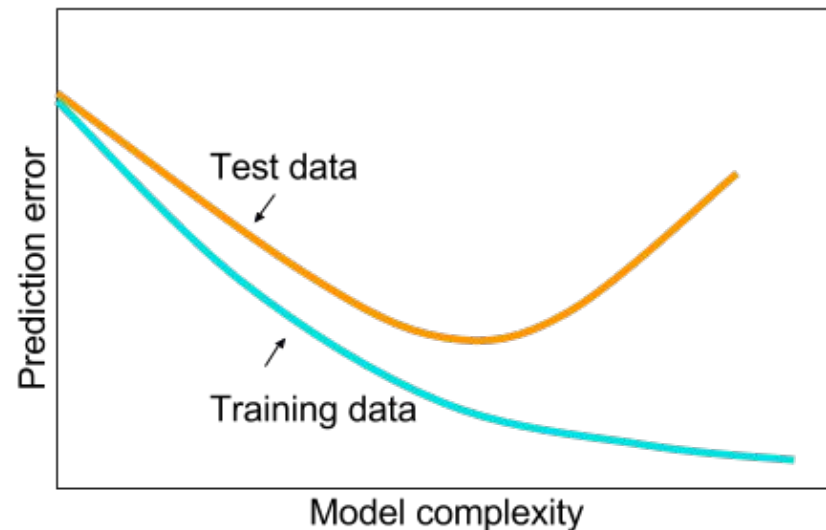
- Always explore your data
- Normalize the data
- Input size is fixed



# Deep Learning specifics

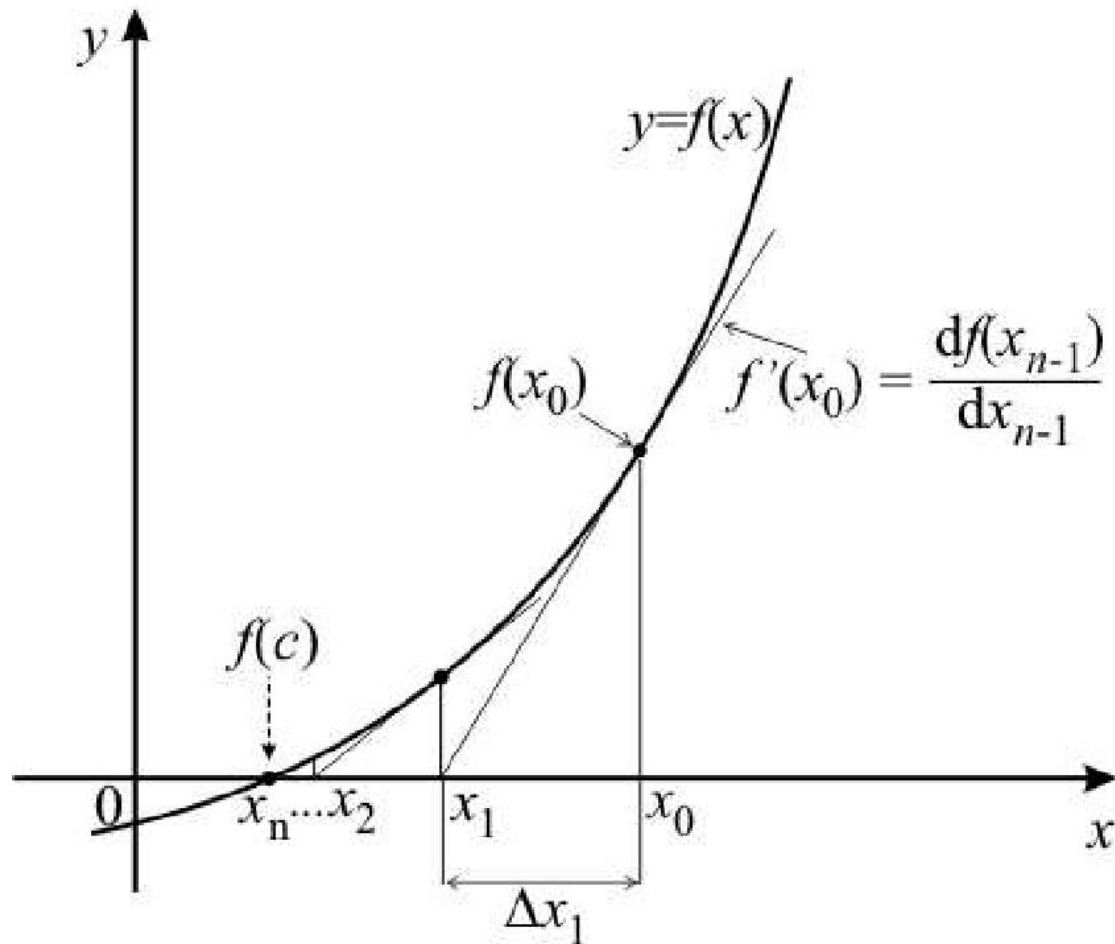
More Key points in Lesson 1-2:

- Careful with the amount of epochs:
  - low (doesn't learn) vs high (memorizes)
- How to spot overfitting
  - $\text{Acc. in Training} > \text{Acc. in Testing}$ , doesn't tell us anything



# Deep Learning specifics

Gradient descent <<<<<<<<<<<<<<< Newton-Raphson



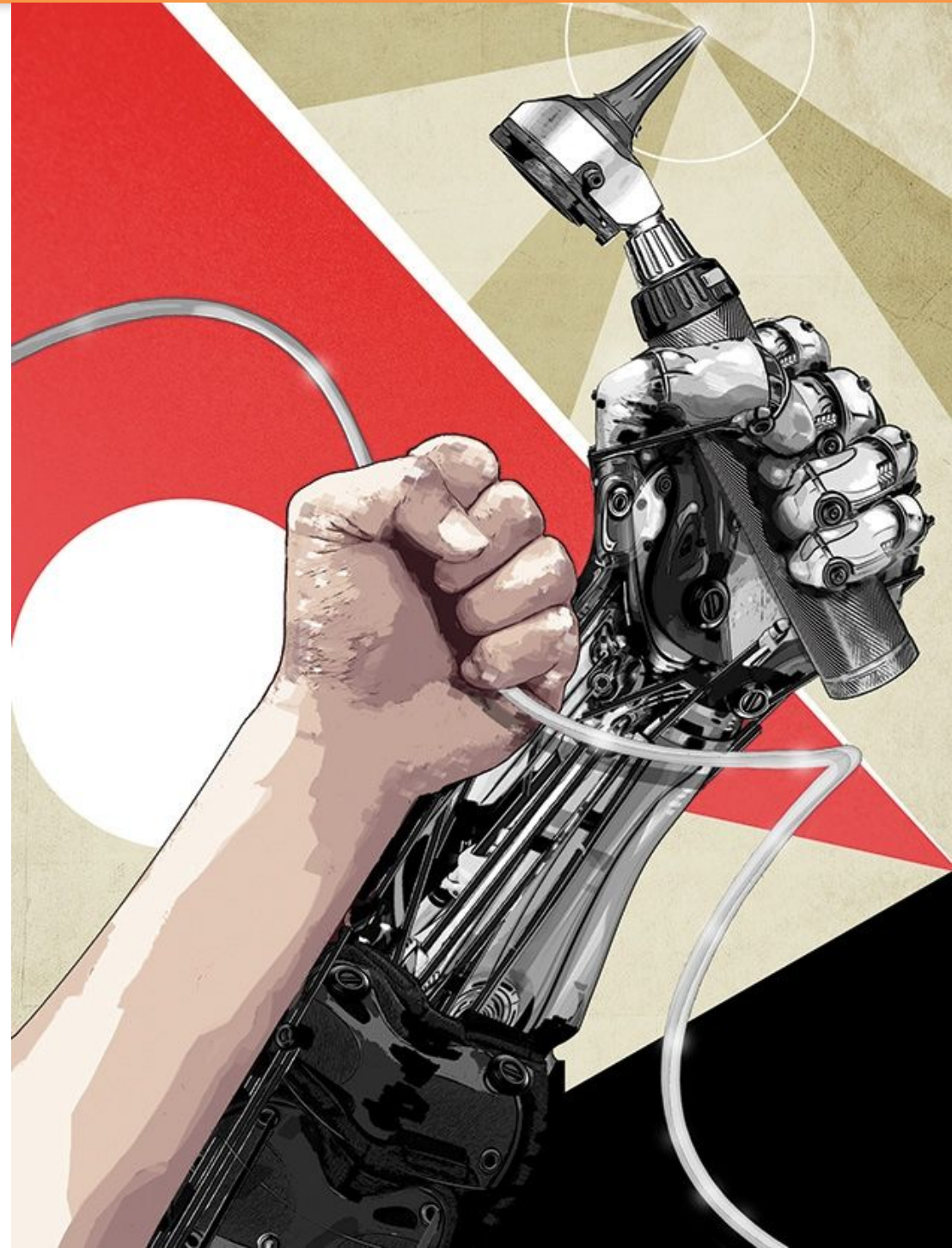
Alternatives:

- Genetic algorithms
- PSO
- Simulated Annealing
- ...



# Work!

- Review the notebooks from the lecture
- Challenge -> applying your model



# Challenge 1st Edition



**The Rebel Fleet/End...**  
John Williams



**Mark Hamill**  
Luke Skywalker



**Carrie Fischer**  
Princess Leia



**Anthony Daniels**  
C3P0

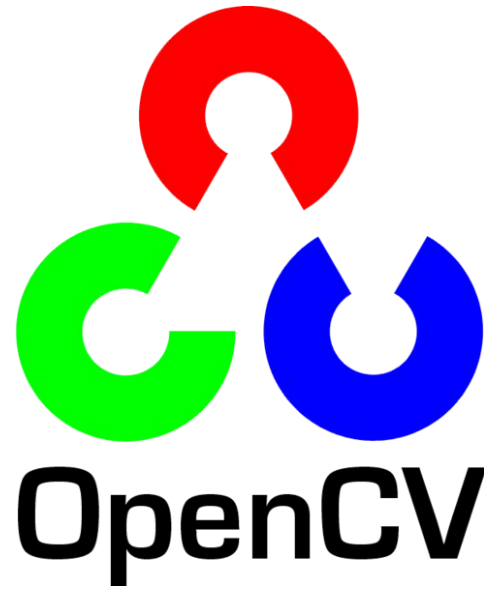


**Kenny Baker**  
R2D2





# 1st Edition Challenge proposed tools



```
from google.colab import drive  
drive.mount('/content/gdrive')  
with open('/content/gdrive/My Drive/foo.txt', 'w') as f:  
    f.write('Hello Google Drive!')
```



Go to this URL in a browser: <https://accounts.google.com/>

Enter your authorization code:

.....

Mounted at /content/gdrive

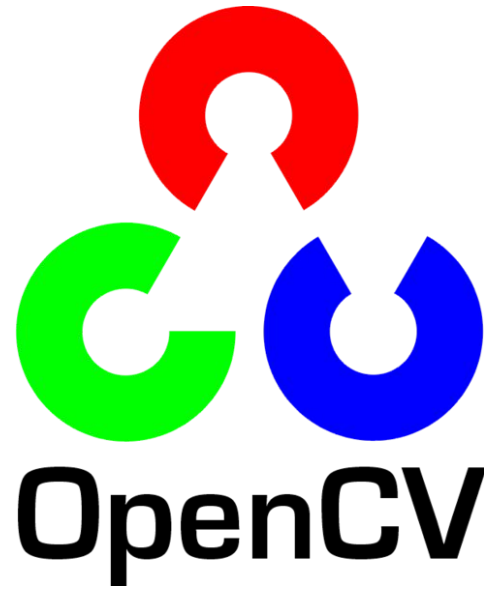
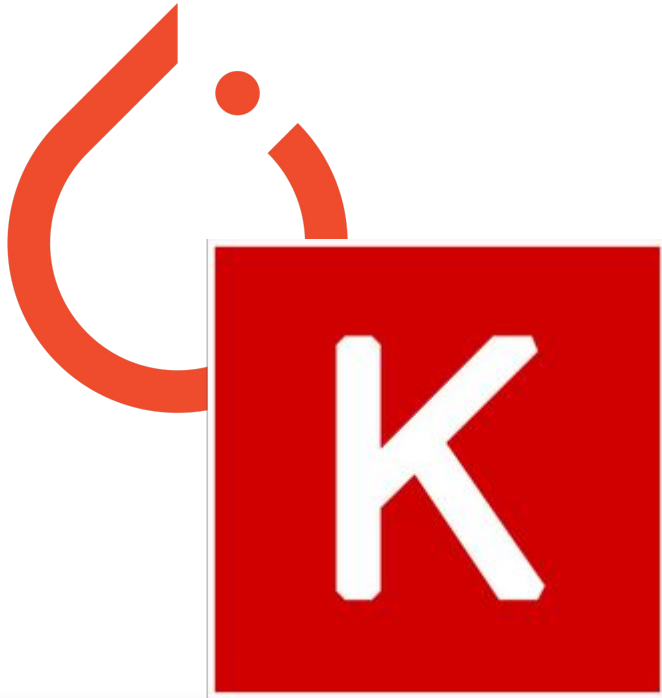


# Challenge 2nd Edition

Loom\_main\_space: 0.73



# 2nd Edition Challenge proposed tools



```
▶ from google.colab import drive  
drive.mount('/content/gdrive')  
with open('/content/gdrive/My Drive/foo.txt', 'w') as f:  
    f.write('Hello Google Drive!')
```

🔗 Go to this URL in a browser: <https://accounts.google.com/>

Enter your authorization code:  
.....

Mounted at /content/gdrive

<





# Other datasets

- Google Collab: instalar el paquete kaggle-cli

```
!pip install kaggle-cli  
# always use ! to run bash commands from Notebook
```

- Obtener los datos escribiendo:

```
!kg download -u <<Kaggle UserName>> -p <<Kaggle Password>> -c  
bluebook-for-bulldozers -f Train.zip
```

- Extraerlos y organizarlos

```
!mkdir -p data/bulldozers/  
!mv Train.zip data/bulldozers/  
!unzip data/bulldozers/Train.zip -d data/bulldozers/
```

- Google Collab: Utilizamos !wget para descargar el archivo de un repositorio, y !tar para descomprimirlo


```
!wget  
https://raw.githubusercontent.com/Giffy/Personal\_dataset\_repository/  
master/train.tar.gz  
!tar xvf train.tar.gz
```

- Jupyter notebook: Descargas los archivos de Kaggle, descomprimes el archivo en data/bulldozers (Debes crearla)


# Your Projects

AI Saturdays Hi...  

 DanielGrande

 Ir a...

 Mensajes sin leer

 Todos los hilos


Canales



# aleatorio

 ambassadorsmadrid

# general

 hispanic\_ambassadors


# madrid\_

# presentations

# proyectosmadrid\_1ed

Mensajes directos



 slackbot

 DanielGrande (tú)

 Miguel Guerrero

 Paco

Aplicaciones



 paperbot

#general

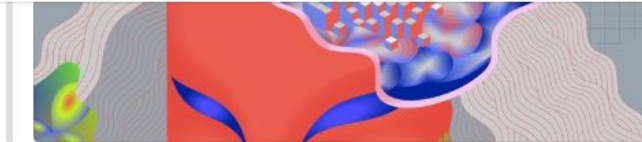
  187 |  9 | todos los temas que no tengan canal propio



 Búsqueda



Hoy



2



2 respuestas

La última respuesta se publicó hoy a las 15:57



**Miguel Guerrero** 15:57

ha respondido a un hilo: <https://www.theverge.com/2019/1/28/18197253/ai-mental-illness-artificial-intelligence-science-neuroimaging-mri>  
sabes que hicimos / intentamos en la 1a edición de BCN un proyecto algo parecido? @danielcanueto @Angel Urbina @Rosa Martínez Corral

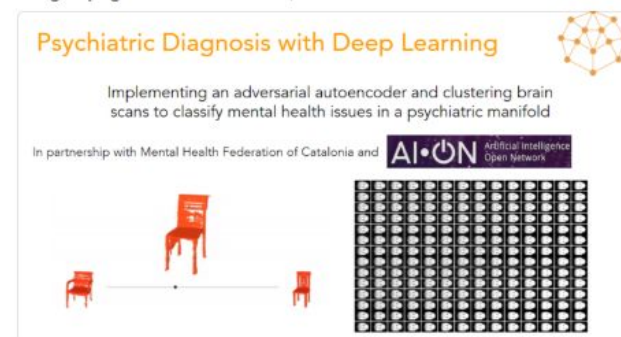
[Ver respuestas más recientes](#)



**Miguel Guerrero** 15:57

ha respondido a un hilo: <https://www.theverge.com/2019/1/28/18197253/ai-mental-illness-artificial-intelligence-science-neuroimaging-mri>  
slide d la presentacion

Imagen pegada el 2019-02-01, 3:57 PM ▾



Enviar mensaje a #general



# BE SOCIAL!



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@aisaturdays\_madrid



@AISaturdaysES



Saturdays.AI



#AISaturdaysMadrid

*madrid@saturdays.ai*



LOOM\_Guest -> Bienvenidos!  
LOOM Princesa -> LoomPr1nc3sa

