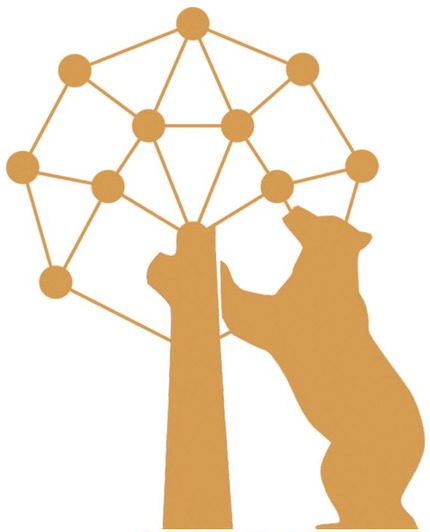


Schedule

State of the course address

Lesson 2 Review

Challenge

Notebook + resources

madrid@saturdays.ai - @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

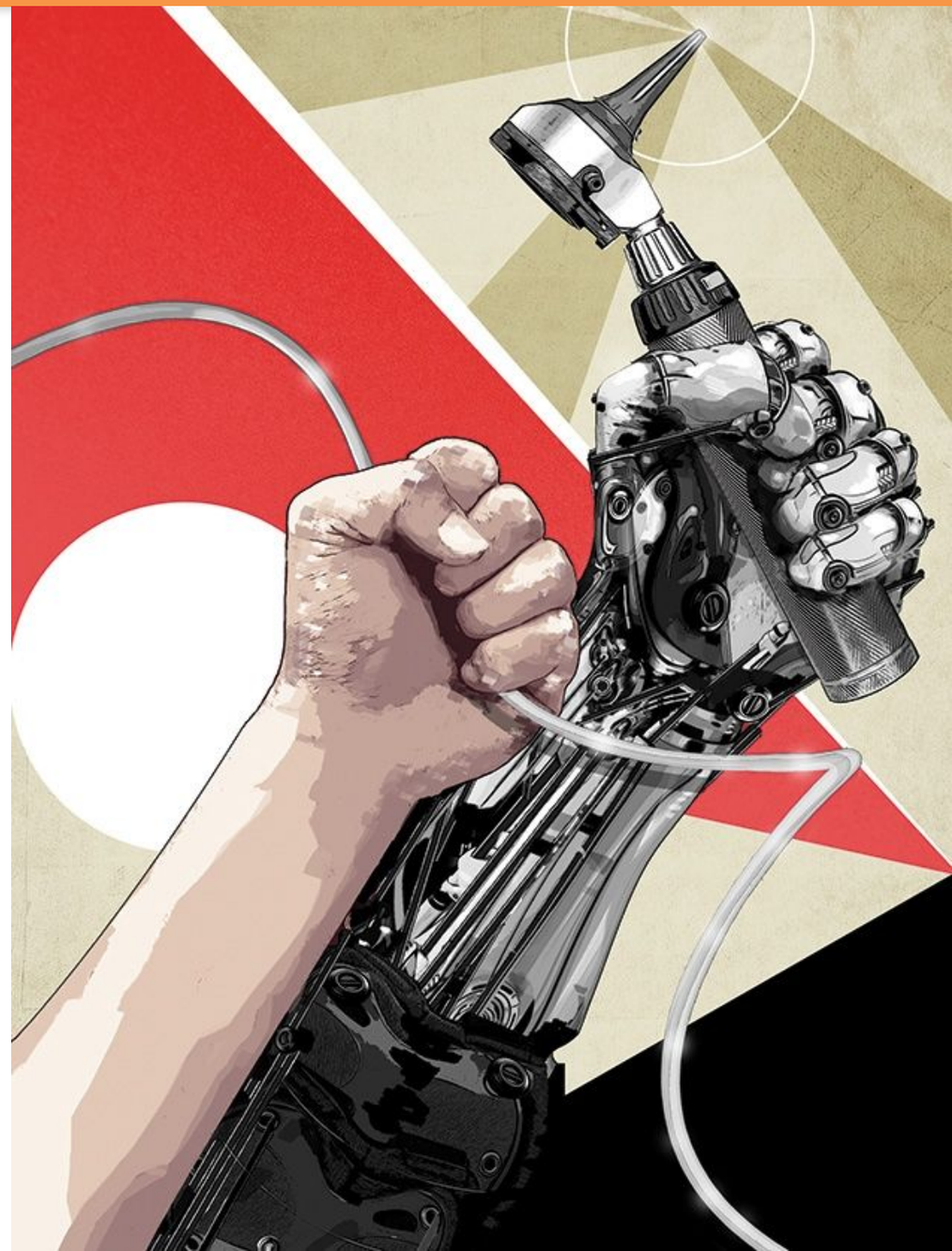
Today!

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)

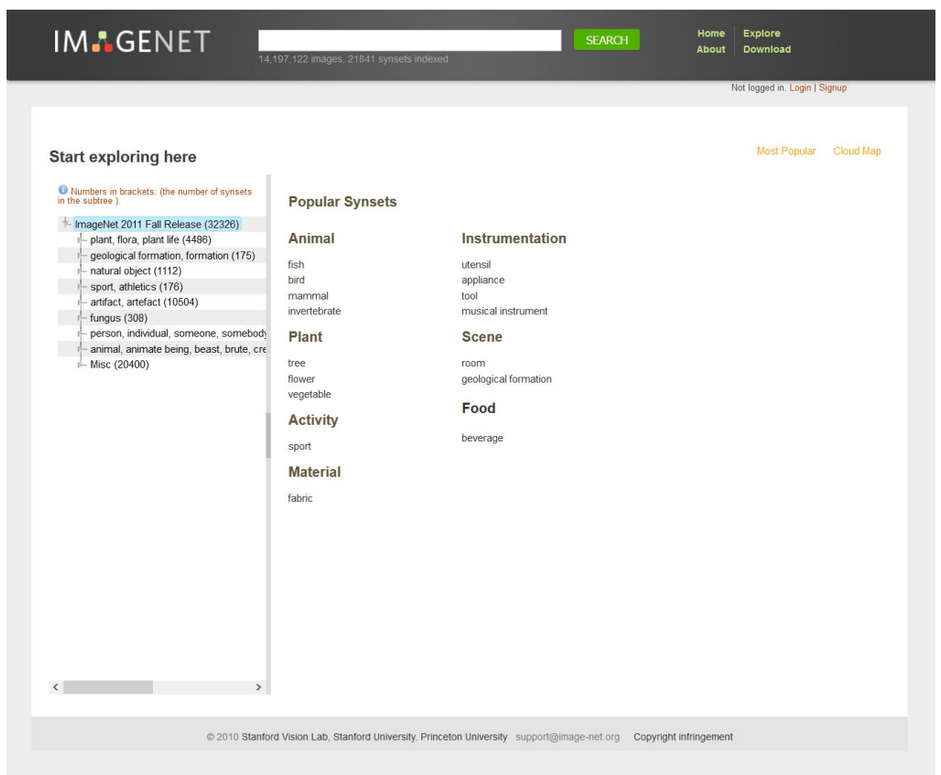
Latest: 12 Oct 2018—This guide has been updated for the upcoming fast.ai part 1 v 3 course, which uses the latest fastai 1.0 library. As the VM image used in this guide is still experimental, this guide might continue to be updated over the next month or two.

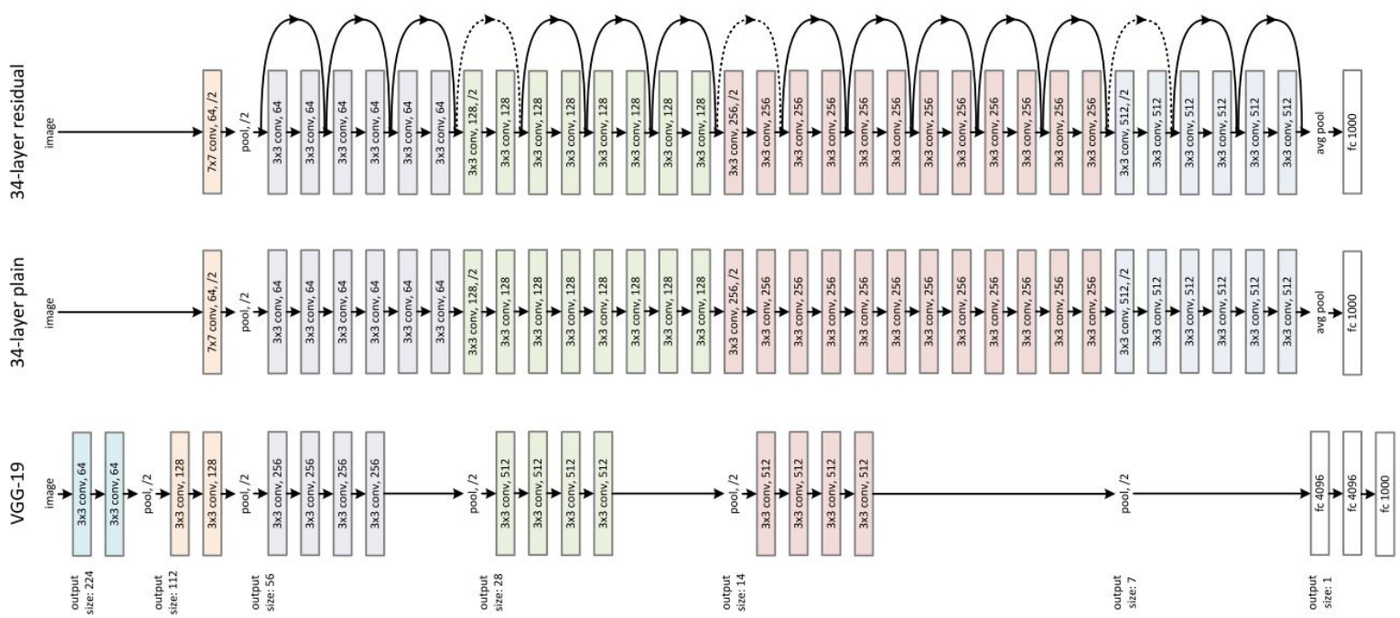
How Khang Follow
Jan 3, 2018 · 8 min read

Learners

Learner : Data + Model + Error metric

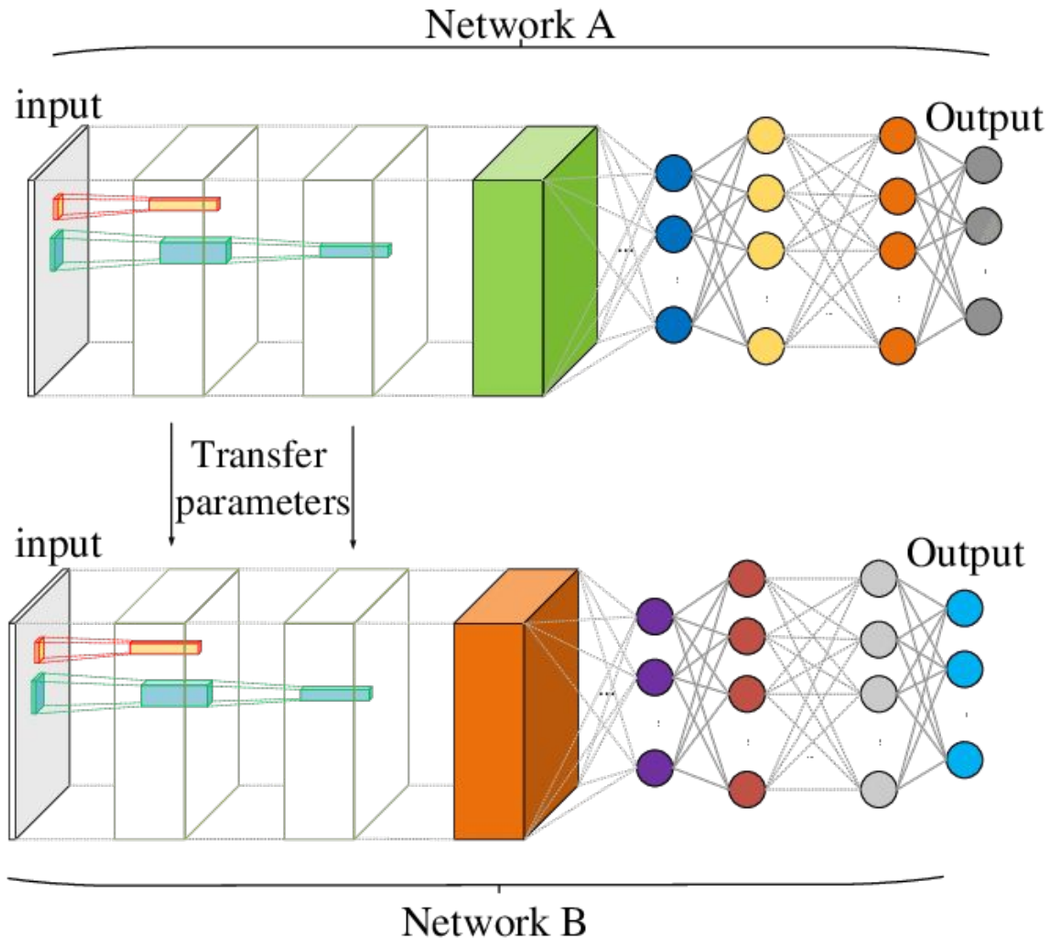
When starting building a model, pick a small architecture (resnet34 > resnet50)





Transfer learning

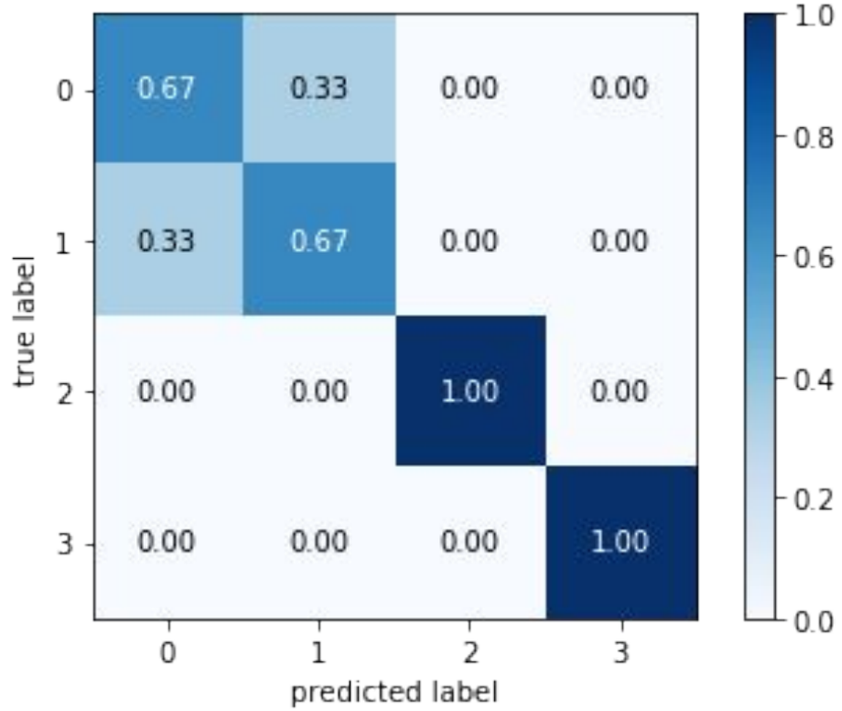
If it's already done, why not just use it?



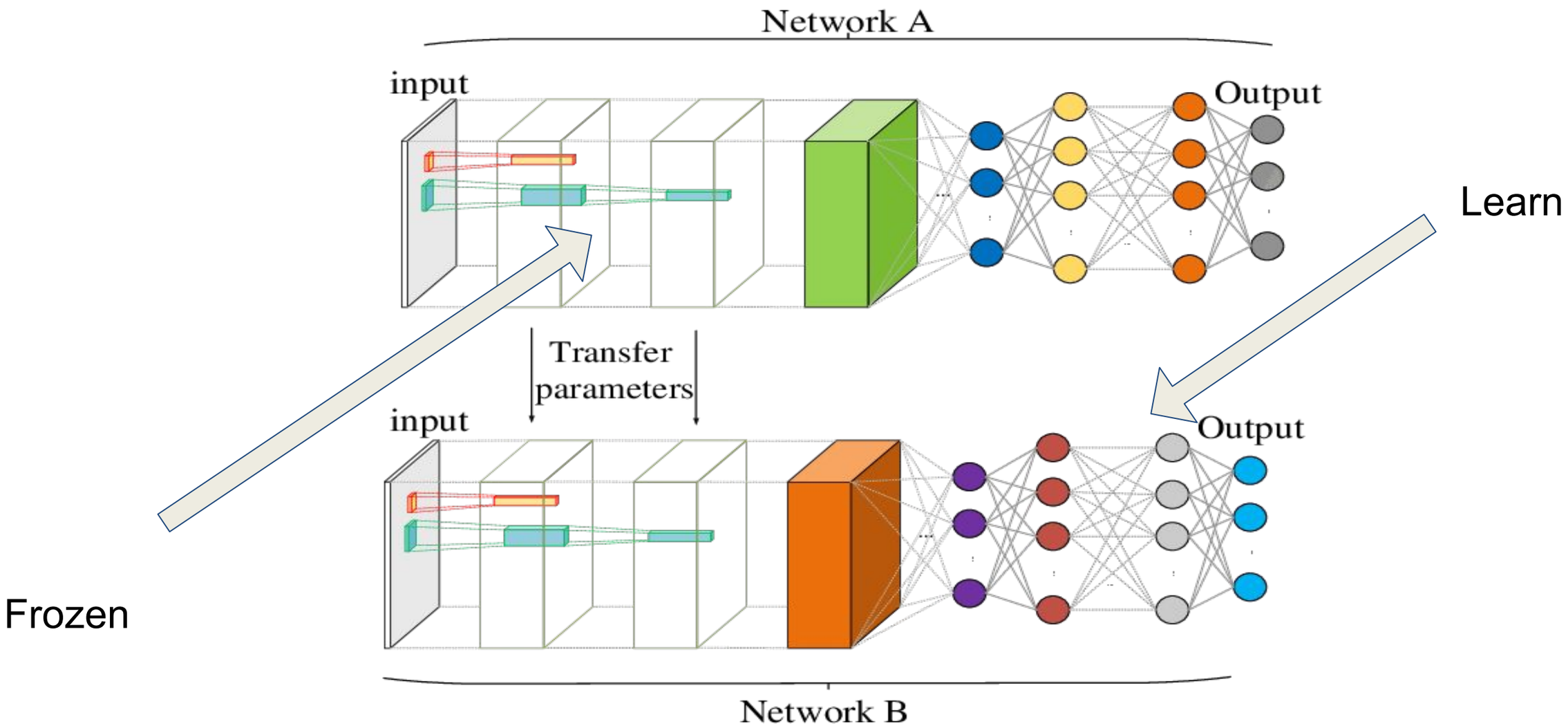
Deep Learning specifics

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



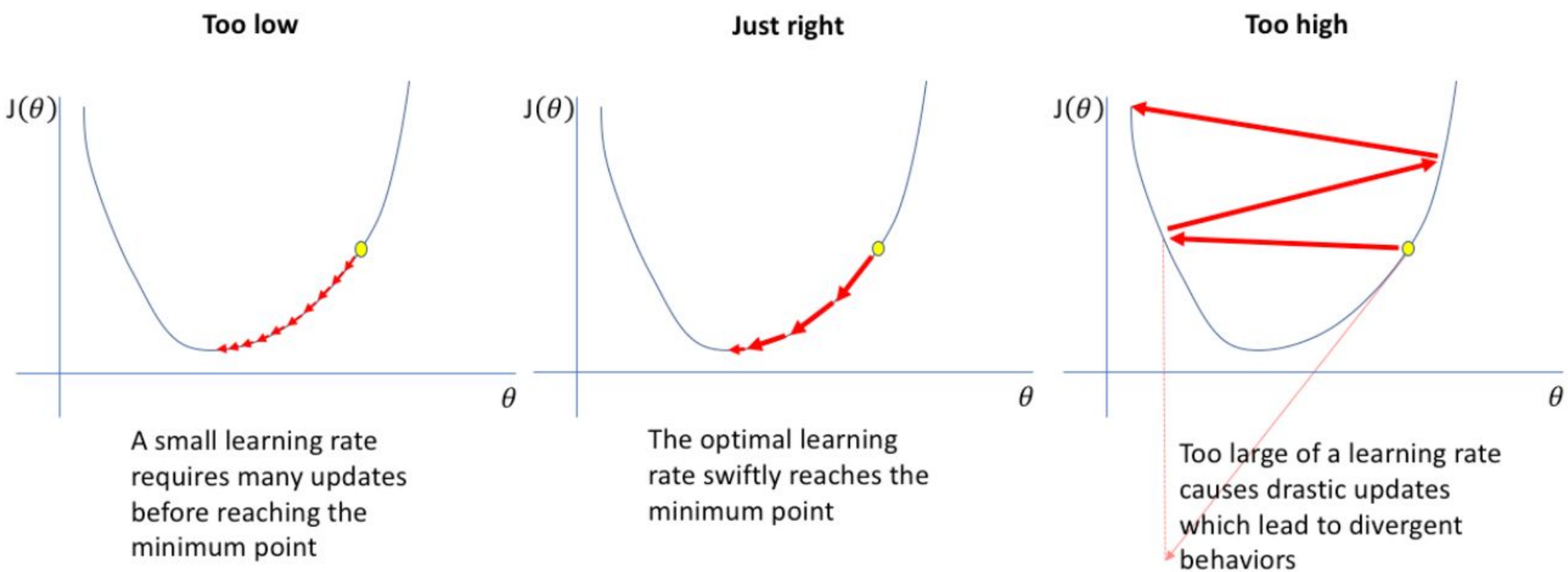
Transfer learning 2



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

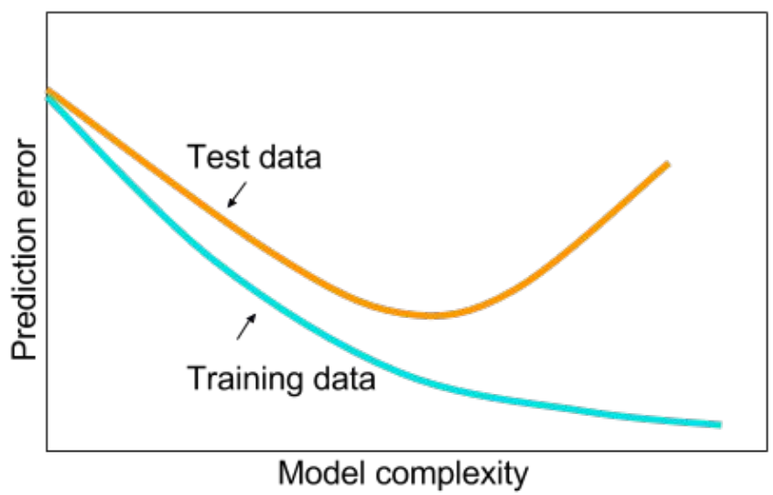
Key points in Lesson 1-2:

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

Deep Learning specifics

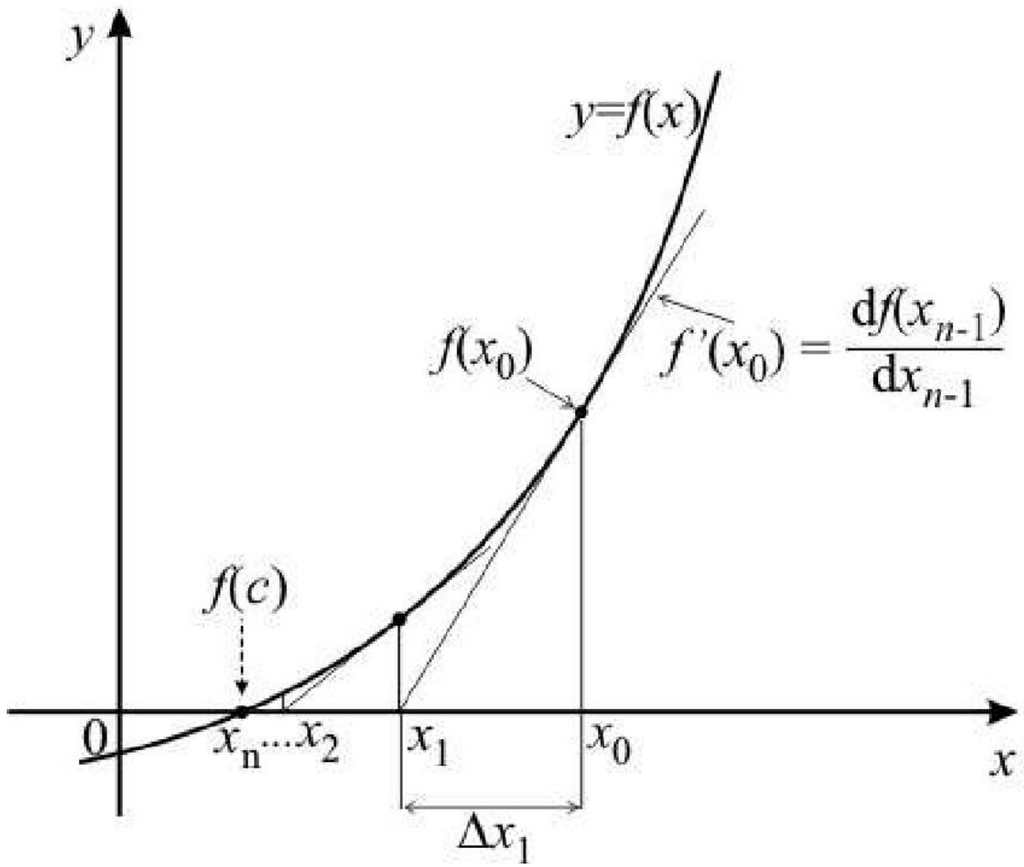
More Key points in Lesson 1-2:

- Careful with the amount of epochs:
  - low (doesn't learn) vs high (memorices)
- How to spot overfitting
  - Acc. in Training > Acc. in Testing, doesn’t tell us anything



Deep Learning specifics

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

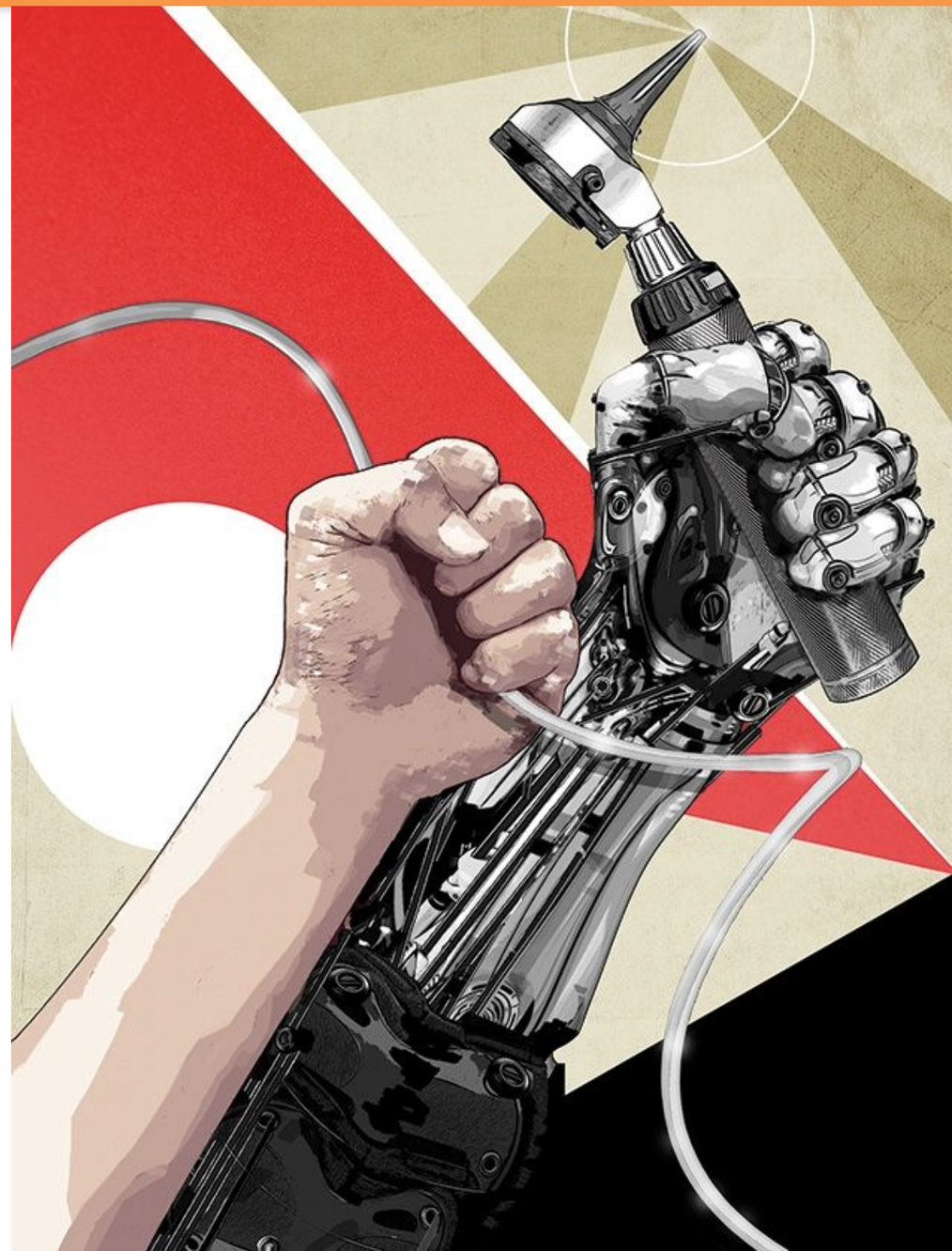


Alternatives:

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

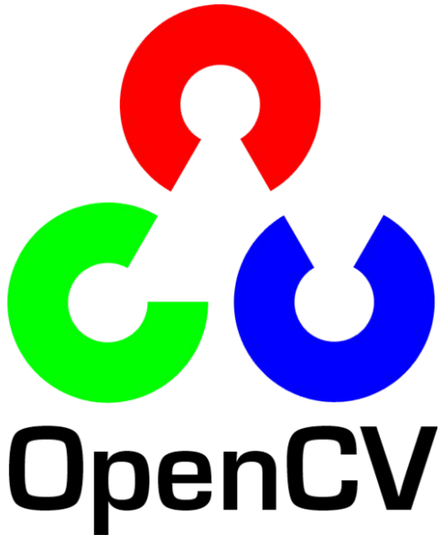
Work!

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



Challenge 1st Edition

1st Edition Challenge proposed tools



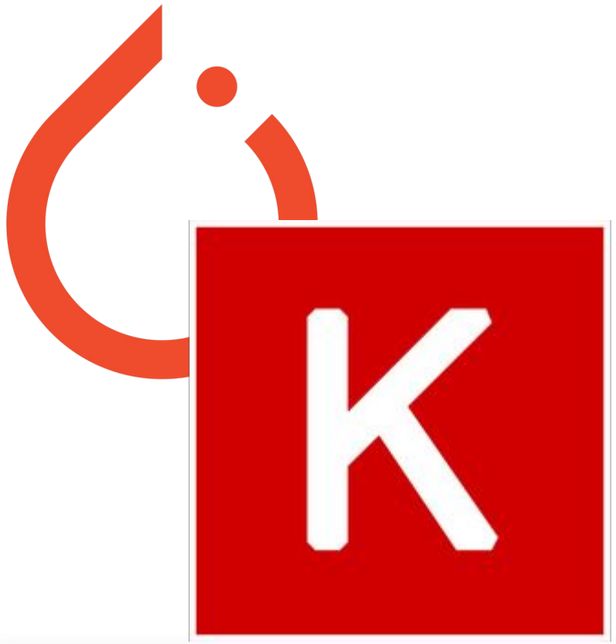
```
from google.colab import drive
drive.mount('/content/gdrive')
with open('/content/gdrive/My Drive/foo.txt', 'w') as f:
  f.write('Hello Google Drive!')
```

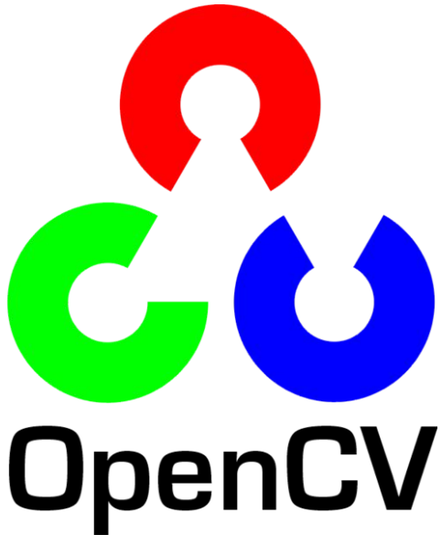
```
Go to this URL in a browser: https://accounts.google.com/

Enter your authorization code:
··········
Mounted at /content/gdrive
```

Challenge 2nd Edition

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

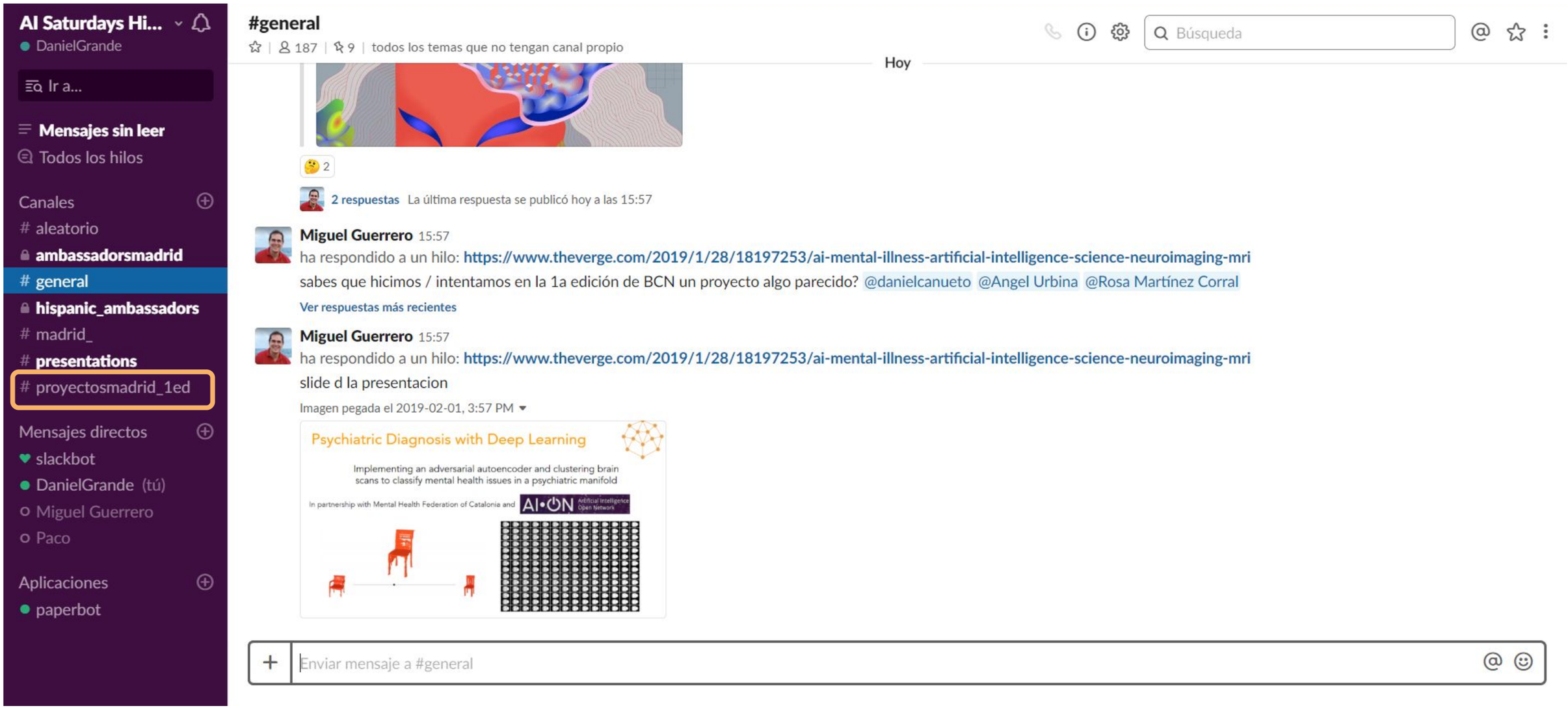
```
!mkdir -p data/bulldozers/
!mv Train.zip data/bulldozers/
!unzip data/bulldozers/Train.zip -d data/bulldozers/
```

- 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, decomprimes el archivo en data/bulldozers (Debes crearla)

Your Projects



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