15 min Prerequisites for Intelligent Video Analytics with Deep Learning

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Prerequisites for Intelligent Video Analytics

• Welcome to "Intelligent Video Analytics with Deep Learning"

• This session is designed to 1. introduce frontier social science research and practices applying video analytics, 2. learn how to understand and analyze quantitative video data

Prerequisites for Intelligent Video Analytics

• There is no prerequisite related with programming skills for this session.

• Feel free to attend the session even if you do not have any technical background.
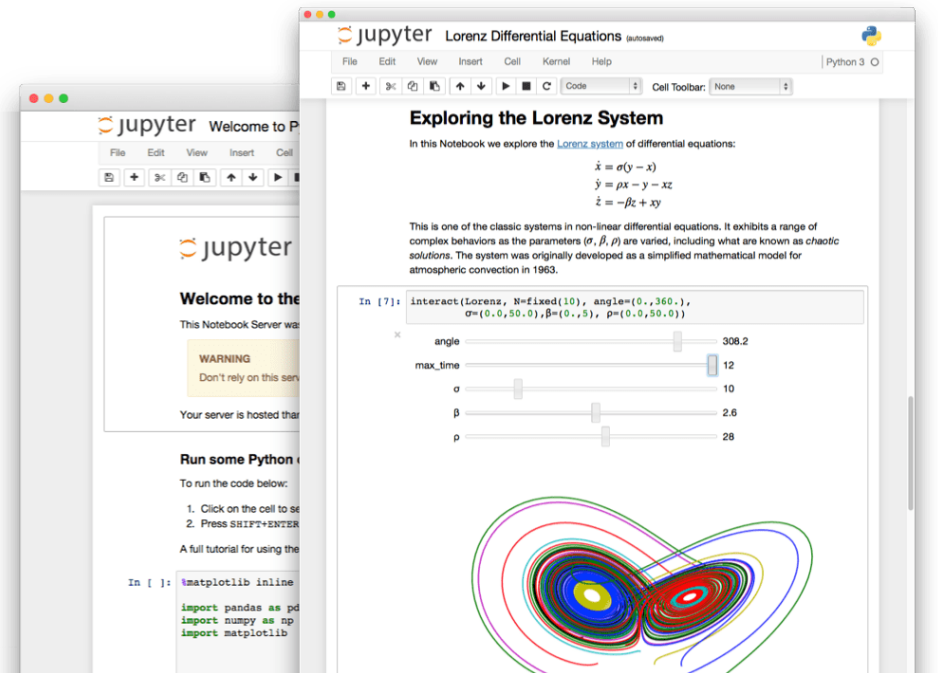
Prerequisites for Intelligent Video Analytics

- Follow the steps below for 15 minutes.

    - Step1. Quick Tutorial for Google Colaboratory (5 min)

    - Step2. Take Any Video (< 60 seconds) (2 min)

    - Step3. Upload your Video on Google Colaboratory (3 min)

    - Step4. Create an Account at Google Cloud Platform (5 min)

- If you get stuck, please email me at the following address:

    - Email: quantic.jh@gmail.com

Step1. Quick Tutorial for Google Colab

What is Google Colaboratory?

• Google Colab is a free cloud service based on Jupyter Notebooks that support totally free GPU

• What is the Jupyter Notebook?

 • An open-source **web application** that allows you to create documents that contain **live code**, equations, visualizations and narrative text.
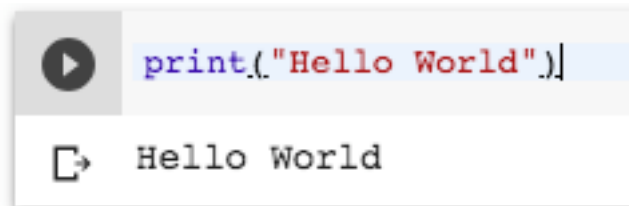
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Hello World! on Google Colab

- Access to URL: https://colab.research.google.com/notebooks/welcome.ipynb
  - We only need a Google account to do this

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Hello World! on Google Colab

- Write "print("Hello World")" as above

- Click button or type "CTRL + ENTER"

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Step2. Take Any Video (< 60 seconds)

Take Any Video with Your Smartphone

• We will detect and label entities, such as dogs, flowers, and people, throughout the entire video.

Step3. Upload your Video on Google Colab

File Upload on Colab

Step1. Access to URL: https://colab.research.google.com/notebooks/io.ipynb

Step2. Run the first cell "Local file system"

- Click button ▶ or type "CTRL + ENTER"

▾ Local file system

▾ Uploading files from your local file system

files.upload returns a dictionary of the files which were uploaded. The dictionary is keyed by the file name, the value is the data which was uploaded.

```
from google.colab import files

uploaded = files.upload()

for fn in uploaded.keys():
  print('User uploaded file "{name}" with length {length} bytes'.format(
      name=fn, length=len(uploaded[fn])))
```

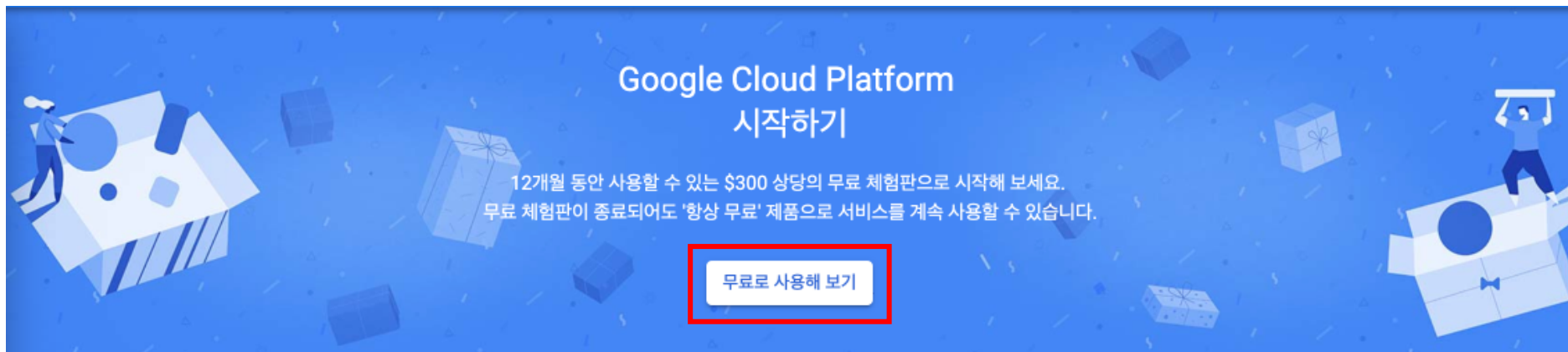파일 선택 선택된 파일 없음   Cancel upload

Click Here!

Step4. Create an Account for Google Cloud API

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Create an Account for Google Cloud API

Step1. Access to https://console.cloud.google.com/

Step2. Subscribe Google Cloud Platform

Note. Even if you register your credit card, you will not be charged.

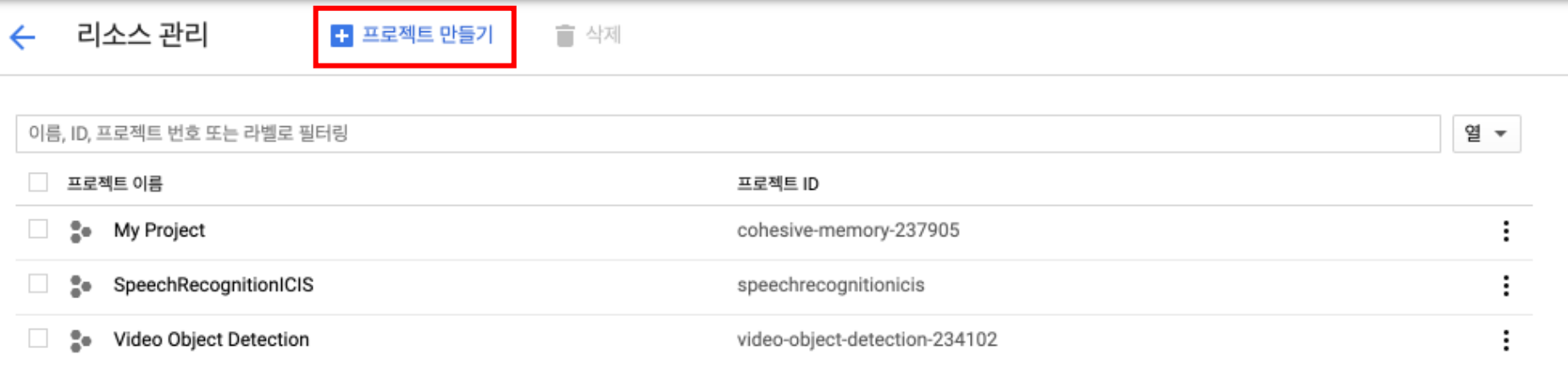Click Here!

Create an Account for Google Cloud API

Step3. Select or create a Google Cloud Platform project

Access below URL (manage resources page) and create a project

https://console.cloud.google.com/cloud-resource-manager

Click Here!

Create an Account for Google Cloud API

Step4. Enable the Cloud Video Intelligence API

Access below URL to enable Video Intelligence API

https://console.cloud.google.com/flows/enableapi?apiid=videointelligence.googleapis.com

Step5. Set up authentication, download JSON file that include your key

1. Go to the **Create service account key** page.
   https://console.cloud.google.com/apis/credentials/serviceaccountkey
2. From the **Service account** list, select **New service account**.
3. In the **Service account name** field, enter a name.
4. Don't select a value from the **Role** list. No role is required to access this service.
5. Click **Create**. A note appears, warning that this service account has no role.
6. Click **Create without role**. **A JSON file that contains your key downloads to your computer. (KEEP THIS JSON FILE!)**

Thank you ☺

Contact Info: quantic.jh@gmail.com

Appendix. Google Colaboratoy Useful Shortcuts

Actions	Colab	Jupyter
show keyboard shortcuts	Ctrl/Cmd M H	H
Insert code cell above	Ctrl/Cmd M A	A
Insert code cell below	Ctrl/Cmd M B	B
Delete cell/selection	Ctrl/Cmd M D	DD
Interrupt execution	Ctrl/Cmd M I	II
Convert to code cell	Ctrl/Cmd M Y	Y
Convert to text cell	Ctrl/Cmd M M	M
Split at cursor	Ctrl/Cmd M -	Ctrl Shift -

Appendix. Google Drive Access on Colab

- First Step: Upload your data on Google Drive

http://drive.google.com

- Second Step: Enter Authentication Code on Google Colab

  - Access: https://colab.research.google.com/notebooks/io.ipynb

Mounting Google Drive locally

The example below shows how to mount your Google Drive in your virtual machine u: files there. Once executed, observe the new file (foo.txt) is visible in https://drive.g

Note this only supports reading and writing files; to programmatically change sharing

```
from google.colab import drive
drive.mount('/content/gdrive')
```

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

Enter your authorization code:

- Go to Url

- Type Code

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Appendix. Check Data Available on Google Drive

- Type: !ls "/content/gdrive/My Drive/"

  - This is root directory for Google Drive

- For a specific folder, !ls "/content/gdrive/My Drive/{Your Folder Name}"

```
[ ]  !ls "/content/gdrive/My Drive/Lecture/StudyPie/Data"

 ⌐→  crypto_data.zip   kagglecatsanddogs_3367a.zip   PetImages.zip
```