



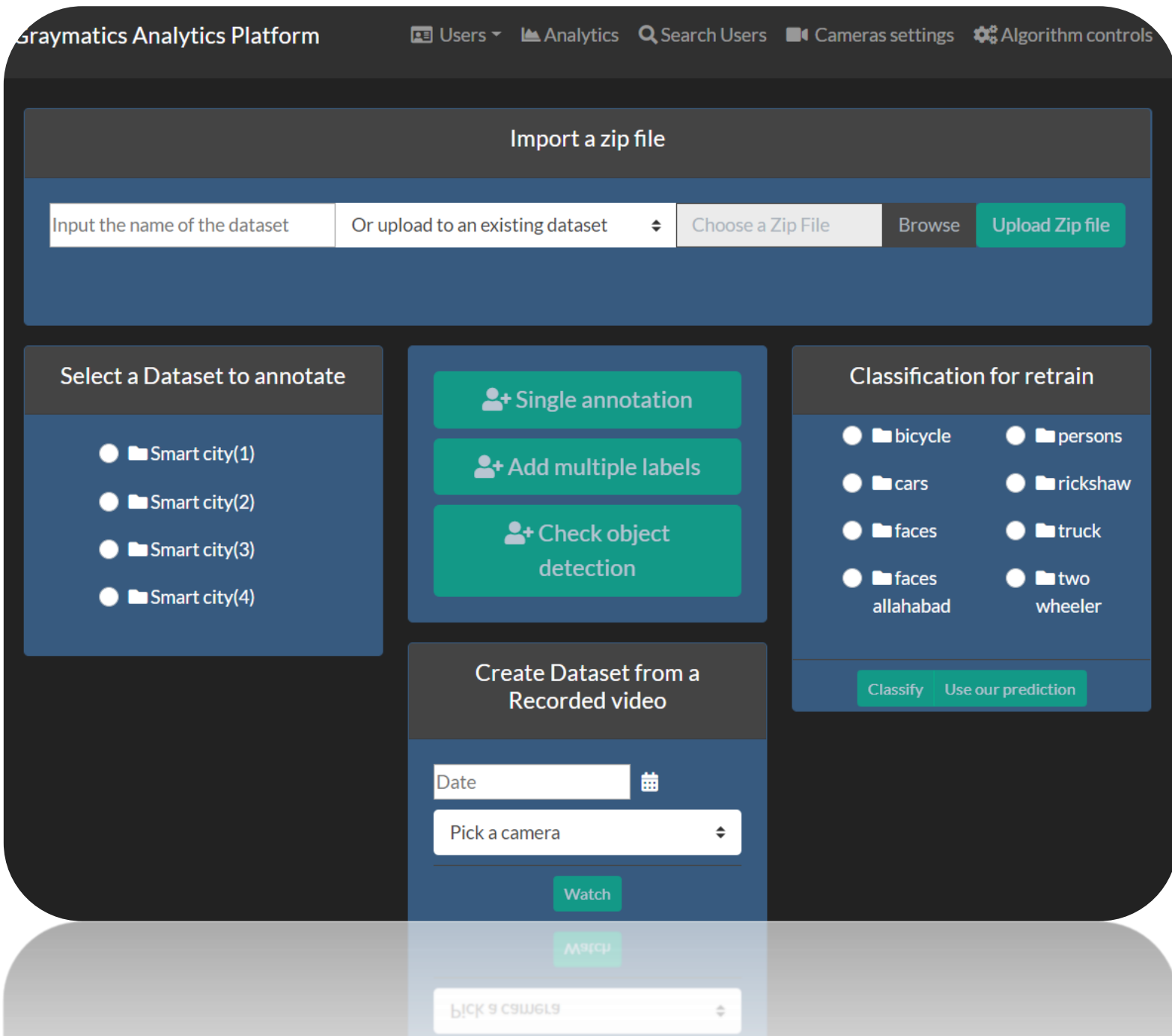
# G-SATE: Self Assembly Training Engine

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By Graymatics

## Load images










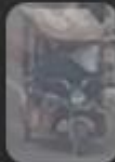


- Upload different types of datasets in order to be annotated.
- This contains an option to select certain periods of time to get the images of CCTV and create own datasets.
- Select different classification sets determined from our algorithms and by a single click classify them on their current label.



## Classify images

- By single click choose if it correspond to the label by the model and check the level of confidence defined.

[Users](#) [Analytics](#) [Search Users](#) [Cameras settings](#) [Algorithm controls](#)

 C: 100% L: rickshaw	 C: 100% L: rickshaw	 C: 100% L: rickshaw	 C: 100% L: rickshaw
 C: 12% L: rickshaw	 C: 17% L: rickshaw	 C: 25% L: rickshaw	 C: 25% L: rickshaw
 C: 35% L: rickshaw	 C: 35% L: rickshaw	 C: 75% L: rickshaw	 C: 95% L: rickshaw

### Properties

C: Confidence  
L: Label  
Click images to be excluded

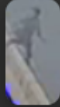









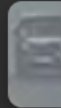




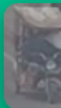






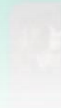

[Back to the menu](#)

## Use Graymatics model prediction.

- Check if the prediction from our model is correct by single click.
- This model check the image and show a result with it current confidence level.

Graymatics Analytics Platform

Users Analytics Search Users Cameras settings Algorithm controls

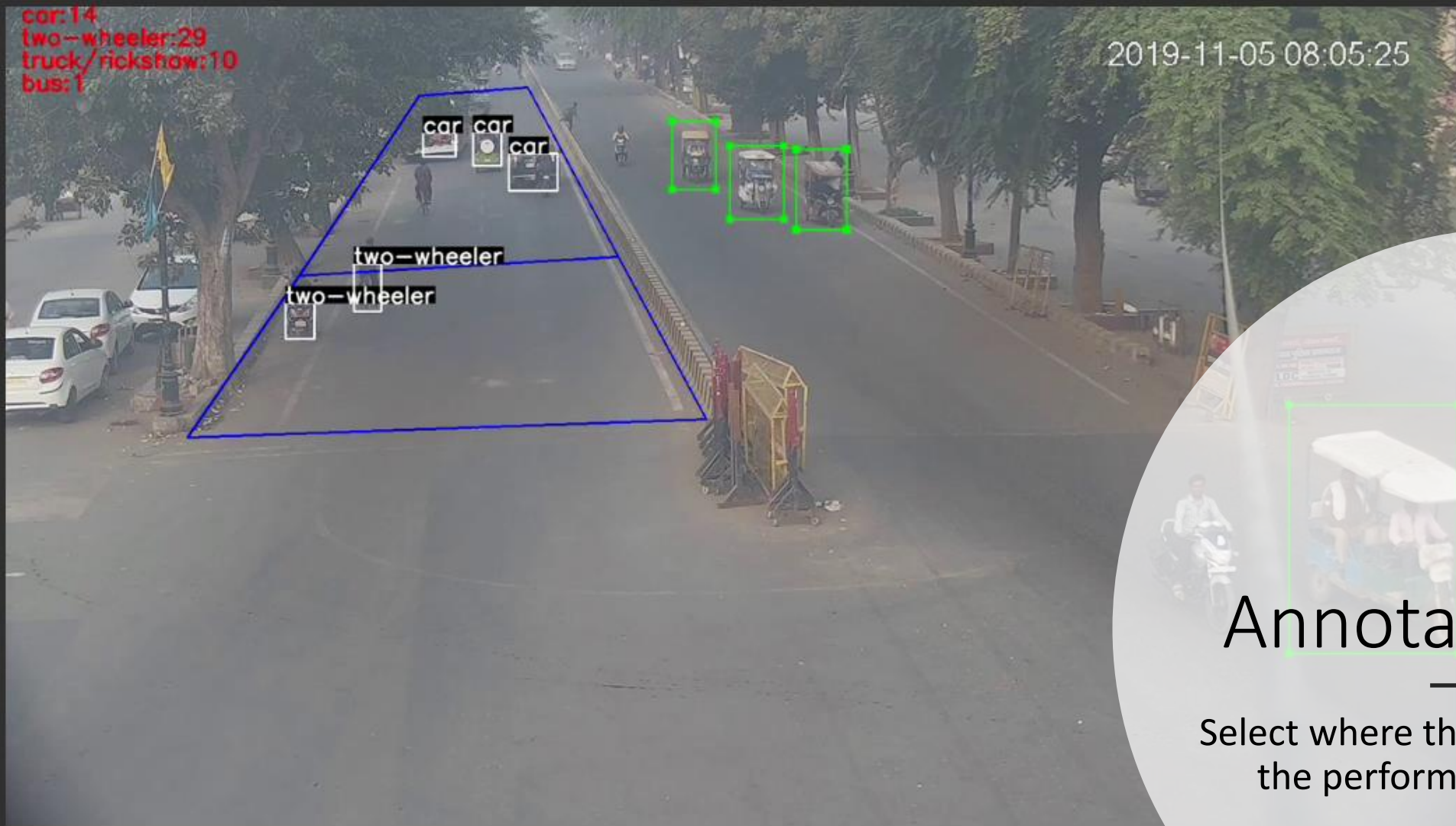
 C: 1% L: rickshaw_nagpur	 C: 95% L: rickshaw_nagpur	 C: 66% L: rickshaw_nagpur	 C: 11% L: rickshaw_nagpur	 C: 77% L: rickshaw_nagpur	 C: 65% L: rickshaw_nagpur
 C: 48% L: rickshaw_nagpur	 C: 86% L: rickshaw_nagpur	 C: 45% L: rickshaw_nagpur	 C: 75% L: rickshaw_nagpur	 C: 23% L: rickshaw_nagpur	 C: 100% L: rickshaw_nagpur
 C: 19% L: rickshaw_nagpur	 C: 82% L: rickshaw_nagpur	 C: 7% L: rickshaw_nagpur	 C: 36% L: rickshaw_nagpur	 C: 84% L: rickshaw_nagpur	 C: 20% L: rickshaw_nagpur
 C: 100% L: rickshaw_nagpur	 C: 85% L: rickshaw_nagpur	 C: 10% L: rickshaw_nagpur	 C: 30% L: rickshaw_nagpur	 C: 84% L: rickshaw_nagpur	 C: 50% L: rickshaw_nagpur

Prediction

C: Confidence  
L: Label  
Click images to be included

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### List of areas

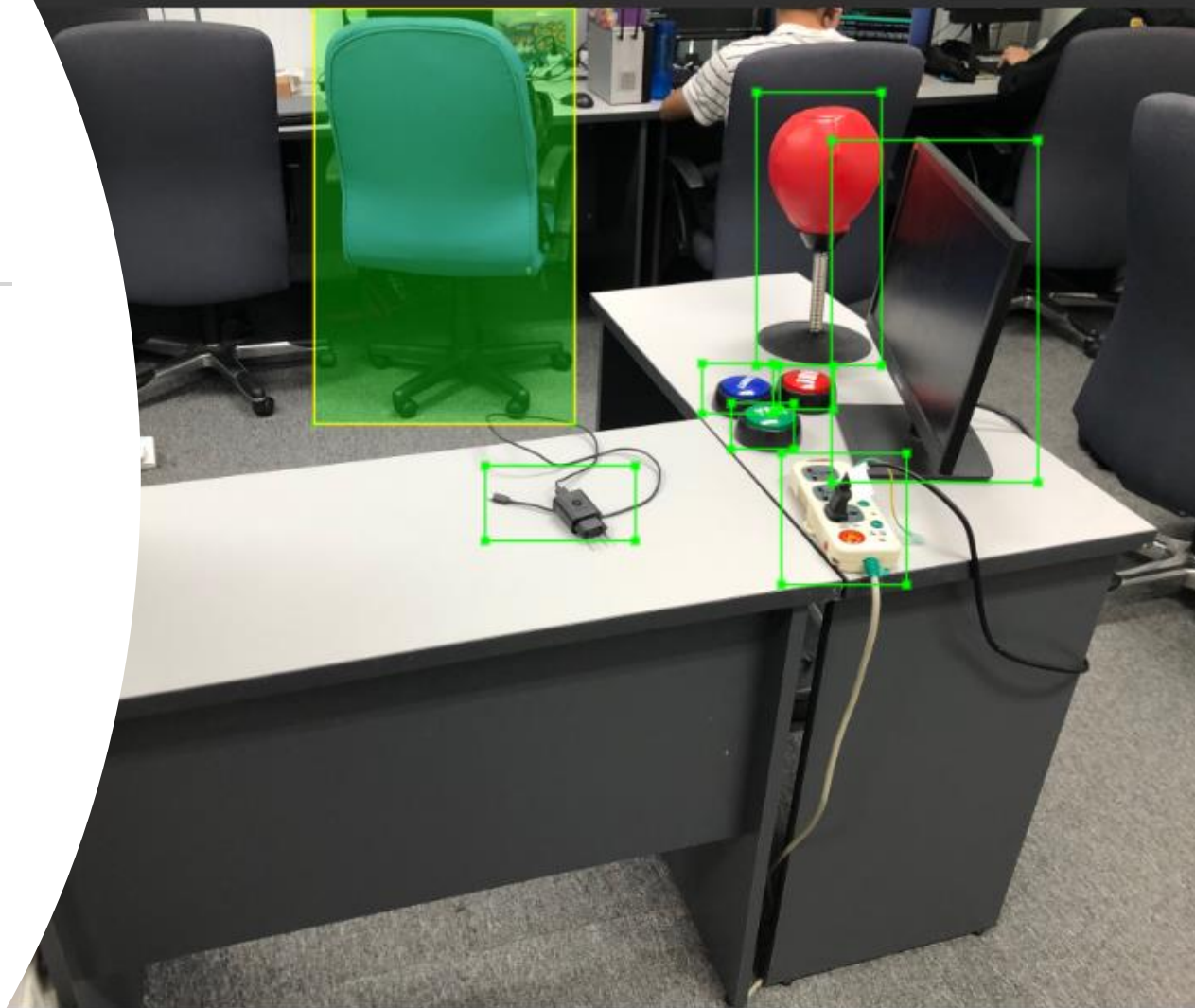
- rikshaw
- rikshaw
- rikshaw
- rikshaw

## Annotate Dataset

Select where the object is to improve the performance of detection.

## Use our generic object detector

- With our generic object detector we can define the objects in order to train a new model with less time for annotations.
- This can be applied to any new object that we want to detect in any of our previous datasets.



### Objects detected

- object
- object
- object
- object
- object
- object
- object
- object
- chair

### Instructions

Click the object to define it with the new label

Add label

Update label

chair



# Load a Dataset

- With our annotation system, the data obtained from CCTV's can be used to train a new Model.
- Here it is being configured in order to be read after by the pre-trained model.

The screenshot shows the 'mnist' dataset page in the Graymatics Training Cloud. The page has a header with 'Graymatics Training Cloud' and 'Image Classification Dataset' tabs. Below the header, the dataset name 'mnist' and owner 'gm' are displayed. There are 'Clone Job' and 'Delete Job' buttons. The main content area is divided into three panels: 'Job Information', 'Parse Folder (train/val)', and 'Job Status Done'. The 'Job Information' panel lists details like 'Job Directory', 'Image Dimensions', 'Image Type', 'Resize Transformation', 'DB Backend', 'Image Encoding', 'DB Compression', and 'Dataset size'. The 'Parse Folder (train/val)' panel shows 'Folder', 'Number of Categories', 'Training Images', and 'Validation Images'. The 'Job Status Done' panel shows a timeline of events: 'Initialized at Nov 29, 06:23:08 AM (1 second)', 'Running at Nov 29, 06:23:09 AM (3 minutes, 46 seconds)', and 'Done at Nov 29, 06:26:56 AM (Total - 3 minutes, 47 seconds)'. There are also buttons for 'Parse Folder (train/val) Done', 'Create DB (train) Done', and 'Create DB (val) Done'.

Graymatics Training Cloud | Image Classification Dataset

mnist  
Owner: gm

Clone Job Delete Job

Job Information

Job Directory  
/workspace/jobs/20191129-062308-0d1f

Image Dimensions  
256x256 (Width x Height)

Image Type  
Color

Resize Transformation  
Squash

DB Backend  
Imdb

Image Encoding  
png

DB Compression  
none

Dataset size  
832 MB

Parse Folder (train/val)

Folder  
/data/mnist

Number of Categories  
2

Training Images  
52500

Validation Images  
17500 (25.0%)

Job Status Done

- Initialized at Nov 29, 06:23:08 AM (1 second)
- Running at Nov 29, 06:23:09 AM (3 minutes, 46 seconds)
- Done at Nov 29, 06:26:56 AM (Total - 3 minutes, 47 seconds)

Parse Folder (train/val) Done

Create DB (train) Done

Create DB (val) Done

Related jobs

The screenshot shows the 'Create DB (train)' configuration page in the Graymatics Training Cloud. The page has a header with 'Graymatics Training Cloud' and 'Image Classification Dataset' tabs. Below the header, the dataset name 'mnist' and owner 'gm' are displayed. The main content area is divided into two panels: 'Create DB (train)' and 'Job Status Done'. The 'Create DB (train)' panel shows 'Input File (before shuffling)', 'DB Creation log file', 'DB Entries', and a bar chart showing 'Image Count' vs 'Category'. The 'Job Status Done' panel shows 'mnist\_test\_2.0 Done'. There is also a 'Notes' section with 'None'.

Graymatics Training Cloud | Image Classification Dataset

Create DB (train)

Input File (before shuffling)  
train.txt

DB Creation log file  
create\_train\_db.log

DB Entries  
52500

Image Count

Category

Image Mean:

Explore the db

Job Status Done

mnist\_test\_2.0 Done

Notes

None

# Train a model

After the Dataset has being loaded,  
we can start defining parameters of  
our model to be trained.

The screenshot shows the 'New Image Classification Model' interface on the Graymatics Training Cloud. The interface is divided into several sections for configuring the model training process.

- Header:** Graymatics Training Cloud | New Model | gm (Logout) | Info | About
- Title:** New Image Classification Model
- Select Dataset:** A dropdown menu shows 'mnist' is selected. Below it, the dataset details are listed: **mnist**, Done Nov 29, 06:26:56 AM, Image Size 256x256, Image Type COLOR, DB backend Imdb, Create DB (train) 52500 images, and Create DB (val) 17500 images.
- Solver Options:** Includes a checked checkbox for 'Shuffle Train Data', 'Training epochs' set to 30, 'Snapshot interval (in epochs)' set to 1, 'Validation interval (in epochs)' set to 1, 'Tracing Interval (in steps)' set to 0, 'Random seed' set to [none], 'Batch size' set to [network defaults] (with 'multiples allowed'), 'Blob format' set to NVcaffe, 'Solver type' set to SGD (Stochastic Gradient Descent), and 'Base Learning Rate' set to 0.01 (with 'multiples allowed'). There is also an unchecked checkbox for 'Show advanced learning rate options'.
- Data Transformations:** Includes 'Subtract Mean' set to Image and 'Crop Size' set to none.
- Data Augmentations:** Includes 'Flipping' set to None, 'Noise (stddev)' set to 0, 'Contrast (factor)' set to 0, and unchecked checkboxes for 'Whitening' and 'HSV Shifting'.



Standard Networks			
Previous Networks			
Pretrained Networks			
Custom Network			
Tensorflow			
Network	Details	Intended image size	
<input checked="" type="radio"/> LeNet	<a href="#">Original paper [1998]</a>	28x28 (gray)	<a href="#">Customize</a>
<input type="radio"/> AlexNet	<a href="#">Original paper [2012]</a>	256x256	
<input type="radio"/> GoogLeNet	<a href="#">Original paper [2014]</a>	224x224	

## Train a model

Then it can be chosen the specific network for this model.

mnist\_test\_2.0

Owner: gm

Clone Job

Delete Job

Job ID

jobs/20191129-063622-8db3

Show output

output.log

Dataset

mnist

Done Nov 29, 06:26:56 AM

Image Size

256x256

Image Type

COLOR

DB backend

Imdb

Create DB (train)

52500 images

Create DB (val)

17500 images

Job Status Done

- Initialized at Nov 29, 06:36:22 AM (1 second)
- Running at Nov 29, 06:36:24 AM (25 minutes, 30 seconds)
- Done at Nov 29, 07:01:54 AM (Total - 25 minutes, 31 seconds)

Train Tensorflow Model Done

Related jobs

Image Classification Dataset

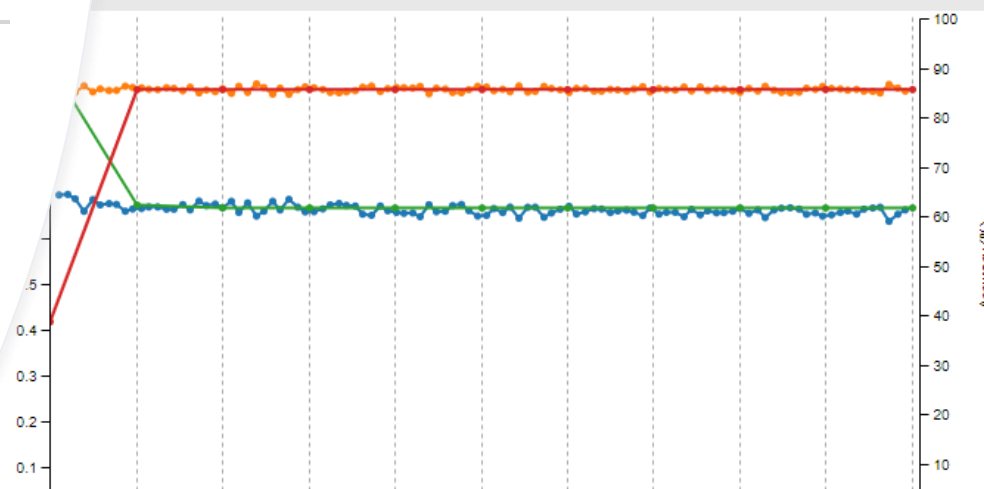
mnist Done

Image Classification Model

mnist\_test Aborted

Notes

None



# Training process

While the model is being trained, it will show the curves of learning and how the model evolves.

# Finished model

From here we can export the model in order to be used.

