

ROBOTIC INFERENCE – TRAINING SUPPLIED DATASET

This writeup aims to explain the methodology behind training the dataset (fondly termed as the foodDataset by the author).

The images are first organized by creating a dataset (the foodDataset). This will provide details as to what kind of images are provided (type, size) and how they should be normalized(squash/crop). The images that are used for training are to be labelled and organized into separate labels. In other words, these images serve as an example the network learns from.



After the dataset is created, it is then trained using one of the many options available. AlexNet was chosen due to its performance and processing power with color images. Then the model trained is validated against an unlabelled image.

Job Information	Parse Folder (train/val)	Job Status Done
Job Directory /opt/DIGITS/digits/jobs/20180318-051121-37d8 Image Dimensions 256x256 (Width x Height) Image Type Color Resize Transformation Squash DB Backend lmdb Image Encoding png DB Compression none	Folder /data/P1_data Number of Categories 3 Training Images 7570 Validation Images 2524 (25.0%)	<ul style="list-style-type: none">• Initialized at 05:11:21 AM (1 second)• Running at 05:11:22 AM (2 minutes, 59 seconds)• Done at 05:14:21 AM (Total - 3 minutes) <div>Parse Folder (train/val) Done ▾</div> <div>Create DB (train) Done ▾</div> <div>Create DB (val) Done ▾</div> <div>Related jobs</div>

The model was run with different epochs – 8, which overfit, 3 which did not show optimized learning rate. But 5 seemed fine.

The Evaluate command was run on varying runs for the model with different epochs until the requisite threshold is met.

```
Average over 10 runs is 4.70528 ms.
Average over 10 runs is 4.69804 ms.
Average over 10 runs is 4.69836 ms.
Average over 10 runs is 4.65625 ms.
Average over 10 runs is 4.23229 ms.
Calculating model accuacy...

  % Total      % Received % Xferd  Average Speed   Time    Time       Time  Current
   Dload  Upload   Total     Spent    Left     Speed
100 14765  100 12449  100  2316    1073    199  0:00:11  0:00:11  --:--:--  2820

Your model accuacy is 75.4098360656 %
```

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DATE: 18/03/2018
TIME: 17:01:00 PM AEST

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