

The NeuralNet Zoo

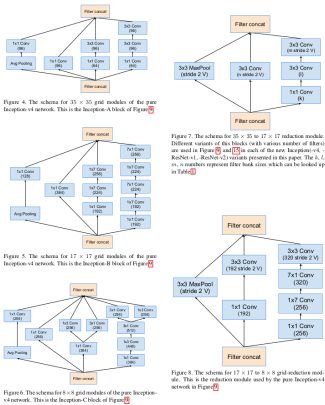


The NeuralNet Zoo

- There are unlimited ways to build a neural network architecture
- And people are doing it every year, every competition, every project ...

Inception versions

ILSVRC 2016 candidates

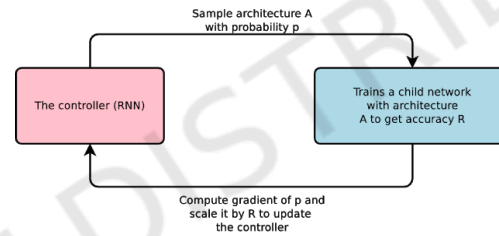


| Team name | Entry description | Number of object categories won | mean AP |
|---------------------|---|---------------------------------|----------|
| CULImage | Ensemble of 6 models using provided data | 109 | 0.662751 |
| Hikvision | Ensemble A of 3 RPN and 6 FRCN models, mAP is 67 on val2 | 30 | 0.652704 |
| Hikvision | Ensemble B of 3 RPN and 5 FRCN models, mean AP is 66.9, median AP is 69.3 on val2 | 18 | 0.652003 |
| NUIST | submission_1 | 15 | 0.608752 |
| NUIST | submission_2 | 9 | 0.607124 |
| Trimpis-Soushen | Ensemble 2 | 8 | 0.61816 |
| 360-MOG-ICT-CAS_DET | 9 models ensemble with validation and 2 iterations | 4 | 0.615561 |
| 360-MOG-ICT-CAS_DET | Baseline: Faster R-CNN with Res200 | 4 | 0.590596 |
| Hikvision | Best single model, mAP is 65.1 on val2 | 2 | 0.634003 |
| CIL | Ensemble of 2 Models | 1 | 0.553542 |
| 360-MOG-ICT-CAS_DET | 9 models ensemble | 0 | 0.613045 |
| 360-MOG-ICT-CAS_DET | 3 models | 0 | 0.605708 |
| Trimpis-Soushen | Ensemble 1 | 0 | 0.57956 |
| 360-MOG-ICT-CAS_DET | res200+dasc+obj+sink+impneg+seg | 0 | 0.576742 |

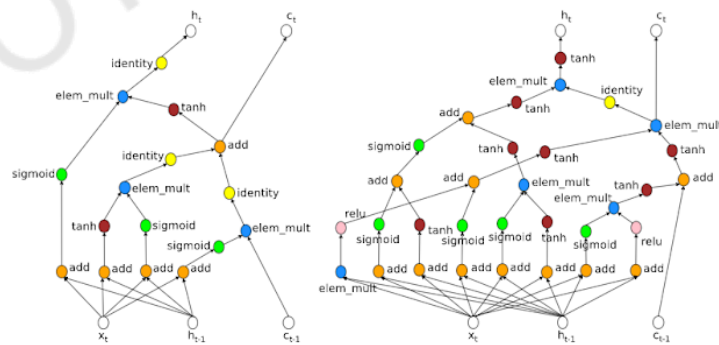
Google AutoML

- Google even tries to automate and pipeling the architecture production ...

Reinforcement learning schematic diagram



CIFAR10 architectures (left) expert design (right) AutoML design



Caffe Model Zoo

<https://github.com/BVLC/caffe/wiki/Model-Zoo> (<https://github.com/BVLC/caffe/wiki/Model-Zoo>)

Table of Contents

- Berkeley-trained models
- Network in Network model
- Models from the BMVC-2014 paper "Return of the Devil in the Details: Delving Deep into Convolutional Nets"
- Models used by the VGG team in ILSVRC-2014
- Places-CNN model from MIT.
- GoogLeNet GPU implementation from Princeton.
- Fully Convolutional Networks for Semantic Segmentation (FCNs)
- CaffeNet fine-tuned for Oxford flowers dataset
- CNN Models for Salient Object Subitizing.
- Deep Learning of Binary Hash Codes for Fast Image Retrieval
- Places-CNN models for Scene Recognition