

Perfect results

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Hi Ron,

How are you?

I'm currently working on predicting the subject's age from the vicon points, as Maayan requested.

My problem is that the results i'm getting are too good to be true... I'm adding details about my work until now:

Model

I'm using [PointNet](#). There are a few other models that can handle point clouds as network inputs, but PointNet seems to be the most popular one. The net is designed for **classification** (and segmentation) tasks, and not for regression tasks. I think that transferring the network into a regressor is possible, but for the moment I've decided to use the network 'as is' for binary classification purposes, as a sanity check. A short summary of the network architecture is [here](#). I've used all default parameters (learning rate, batch size...) as described in the paper.

Dataset

1. The dataset contains 235,351 samples. Each sample has 39 points (the subject's skeleton) and age as label. I've converted each label to binary one: young (age<=30) or old (age >=60).
2. The dataset is unbalanced: ~23% of the samples are of old subjects, and ~77% of the samples are of young subjects.
3. Although the dataset is relatively large, it was created only from different 23 people. So many of the samples belong to the same person.
4. I've shuffled the data, and then splitted it into 80% for training and 20% for testing.
5. No preprocessing (normalization, scaling, etc...) was done on the data before training.

Results

Results are placed [here](#). The loss function is negative log-likelihood. The accuracy is the number of correct predictions out of total test size.

I've only trained the network for 10 epochs, and after a single epoch, the accuracy is ~0.99 on both train and test. It's surprising, I was expecting to get accuracy of ~75%~80% due to the bias in the dataset (if for example the network will learn to classify all samples as 'young').

I'm pretty sure something is wrong, but not sure how to "debug" the network. Do you have an idea? Any checks I should do?

Thanks,
Lotem