insghtFace-gender-age mxnet 静态版使用说明文档

insightFace-gender-age symbol instrutions

1 标签格式 .lst

index + \t + gender + \t + age + \t + img_name + \n

Code: train.lst val.lst

```
# trian.lst
with open(train_lst_file_save_path, 'w+') as f:
    for i, img_name in enumerate(name_list[:int(num*0.8)]):
        lis = img_name.split('_')
        # 要求 age需要在[1,100]之间，大于100的，网络会处理成100；gender需要male=1，female=0；而数据集正相反
        age, gender = lis[0], lis[1]
        f.write(str(i) + '\t' +
                str(1-int(gender)) + '\t' + age + '\t' +
                img_name + '\n')
f.close()
# val.lst
with open(val_lst_file_save_path, 'w+') as f:
    for i, img_name in enumerate(name_list[int(num*0.8):]):
        lis = img_name.split('_')
        # 要求 age需要在[1,100]之间，大于100的，网络会处理成100；gender需要male=1，female=0；而数据集正相反
        age, gender = lis[0], lis[1]
        f.write(str(i) + '\t' +
                str(1-int(gender)) + '\t' + age + '\t' +
                img_name + '\n')
f.close()
```

2 Rec idx 生成

采用 mxnet-tools-im2rec.py

command:

```
Python im2rec.py lst_root_path image_root_path --pack-label
```

All lst file in lst_root_path; all images in image_root_path.[default]

Or

All lst file in lst_root_path; all images in image_root_path(Recursive directory), and img_name = abs_path + img_name

3 args

```
def parse_args():
    parser = argparse.ArgumentParser(description='Train face network')
    # general
    parser.add_argument('--data_dir', default='', help='training set directory')
    parser.add_argument('--prefix', default='../model/model', help='directory to save model.')
    parser.add_argument('--pretrained', default='', help='pretrained model to load')
    parser.add_argument('--ckpt', type=int, default=2, help='checkpoint saving option. 0: discard saving. 1: save when necessary. 2: always save')
    parser.add_argument('--loss_type', type=int, default=4, help='loss type')
    parser.add_argument('--verbose', type=int, default=2000, help='do verification testing and model saving every verbose batches')
    parser.add_argument('--max_steps', type=int, default=0, help='max training batches')
    parser.add_argument('--end_epoch', type=int, default=2000, help='training epoch size.')
    parser.add_argument('--network', default='r50', help='specify network')  #r50
    parser.add_argument('--image_size', default='112,112', help='specify input image height and width')
    parser.add_argument('--version_input', type=int, default=1, help='network input config')
    parser.add_argument('--version_output', type=str, default='GAP', help='network embedding output config')
    parser.add_argument('--version_act', type=str, default='prelu', help='network activation config')
    parser.add_argument('--multiplier', type=float, default=1.0, help='')
    parser.add_argument('--lr', type=float, default=0.01, help='start learning rate')
    parser.add_argument('--lr_steps', type=str, default='20000,40000', help='steps of lr changing')
    parser.add_argument('--wd', type=float, default=0.0005, help='weight decay')
    parser.add_argument('--bn_mom', type=float, default=0.9, help='bn mom')
    parser.add_argument('--mom', type=float, default=0.9, help='momentum')
    parser.add_argument('--per_batch_size', type=int, default=128, help='batch size in each context')# 128 per gpu
    parser.add_argument('--rand_mirror', type=int, default=1, help='if do random mirror in training')
    parser.add_argument('--cutoff', type=int, default=0, help='cut off aug')
    parser.add_argument('--color', type=int, default=0, help='color jittering aug')
    parser.add_argument('--ce_loss', default=False, action='store_true', help='if output ce loss')
    parser.add_argument('--gpu_id', type=str, default='1,2', help='gpu_id must 2,1,3 or 1')
    args = parser.parse_args()
    return args
```

Data_dir: rec idx lst root_path

4 注意 Bug

```
def _batch_callback(param):
    '''
    :param param: BatchParams [epoch=epoch, nbatch=nbatch, eval_metric=eval_metric, locals=locals()]
    :return: 每个batch都调用
    '''
    _cb(param)
    global_step[0] += 1
    mbatch = global_step[0]
    # 这里是按照batch的迭代次数 更新的学习率，不是按照epoch更新的学习率！！！
    for _lr in lr_steps:
        if mbatch==_lr:
            opt.lr *= 0.1
            print('lr change to', opt.lr)
            # break
        if mbatch==_lr:
            print('lr-batch-epoch:',opt.lr,param.nbatch,param.epoch)  # BatchEndParams参数类 可以点出来
        if mbatch %1000 ==0:
            arg, aux = model.get_params()
            all_layers = model.symbol.get_internals()
            _sym = all_layers['fc1_output']
            mx.model.save_checkpoint(args.prefix, 0, _sym, arg, aux)
    if mbatch==lr_steps[-1]:
        arg, aux = model.get_params()
        all_layers = model.symbol.get_internals()
        _sym = all_layers['fc1_output']
        mx.model.save_checkpoint(args.prefix, 0, _sym, arg, aux)
        # sys.exit(0) 代表正常退出 python程序； 不应该在这里使用的。
        sys.exit(0)
```

5 总结

使用 symbol 的 insghtface-gender-age，需要先生成 lst，再生成 rec idx，然后按照步骤 3-4 修改，直接训练即可!!!