CENG5030 Lab 05

Mobile Neural Network: MNN

1 Sample Code:

- Build the MNN from the source code:
  - Go to the `path to MNN/schema`
  - Run `sh generate.sh` in your terminal
  - Go to the `path to MNN`
  - Run `mkdir build && cd build` in your terminal
  - Run `cmake -DMNN_BUILD_DEMO=ON -DMNN_BUILD_CONVERTER=ON ..`; Note that `CMake 3.0 or higher is required`.
  - Run `make -j $NPROC`
- Run the human pose estimation example:
  - Go to the `./Lab05-code/Data/model`
  - Copy model mobilenet_v1_075.pb, inputPose.jpeg, convertTool.sh, runPose.sh to `path to MNN/build`
  - Go to the `path to MNN/build`, run `convertTool.sh` to get the MNN model, and run `sh runPose.sh` to get the result
  - Open the `outputPose.png` to see the visualization of human pose estimation

2 Assignments:

Q1 Convert the model in `./Lab05-code/Data/model/deeplabv3_257_mv_gpu.tflite` using the MNNConvert tool to MNN model format. Please submit your MNN model.

Q2 Learn the `segment.cpp` from the `path to MNN/demo/exec/` to get the result of semantic segmentation

- Copy image from `./Lab05-code/Data/inputSeg.jpeg` to `path to MNN/build`
- Use the `segment.out` in `path to MNN/build` and the MNN model from **Question 1**
- Get the visualization of semantic segmentation and submit the result image.

Useful Materials:

- MNN Github
- MNN Documentation
- Human Pose Estimation
- Semantic Segmentation
- DeepLab

Tips: You should learn the code style from the sample code to build your project.