香港中文大學
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CMSC5743 Lab 04
MNN Tutorial Materials

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- Converter
- Interpreter
- C/C++ or Python

Converter

- Frontends
- Graph Optimization

- Tensorflow
- Caffe
- ONNX

- Operator Fusion
- Operator Replace
- Layout Adjustment

Interpreter

- Engine
- Backends
- Runtime Optimization

- Graph Schedule
- CV process

- CPU Backend
- Metal Backend
- OpenCL Backend
- Vulkan Backend

- Winograd Conv
- Strassen
- Low Precision Calculation
- Neon/ASM
- Multi-threads
- Memory Reuse
- Heterogeneous Computing

Homework and Sample Code

- Build the MNN from the source code:
  - Go to the `./Lab04-code/MNN/schema`
  - Run `sh generate.sh` in your terminal
  - Go to the `./Lab04-code/MNN`
  - Run `mkdir build && cd build` in your terminal
  - Run `cmake DMNN_BUILD_DEMO=ON MNN_BUILD_CONVERTER=ON ..`
  - Run `make -j8`
- Run the human pose estimation example:
  - Go to the `./Lab04-code/Data/model`
  - Copy modelmobilenet_v1_075.pb, inputPose.jpeg, convertTool.sh, runPose.sh to `./Lab04-code/MNN/build`
  - Go to the `./Lab04-code/MNN/build` and run `sh runPose.sh` to get the result
  - Open the `outputPose.png` to see the visualization of human pose estimation

Q1 Convert the model in
`./Lab04-code/MNN/Data/model/deeplabv3_257_mv_gpu.tflite`
using the MNNConvert tool to MNN model format. The
MNNConvert tool is in the ./Lab04-code/MNN/build named as
`MNNConvert`

Q2 Learn the `segment.cpp` from the
`/Lab04-code/MNN/demo/exec/` to get the result of semantic
segmentation
- Copy image from `/Lab04-code/Data/inputSeg.jpeg`
  to `./Lab04-code/MNN/build`
- Use the `segment.out` in `./Lab04-code/MNN/build` and the MNN
  model from textbfQuestion 1
- Get the visualization of semantic segmentation

THANK YOU!