# DRP-AI Translator i8 V1.03

Release Note

## Introduction

This release note describes the improvements of the DRP-AI Translator i8.

## Key Features and Enhancements

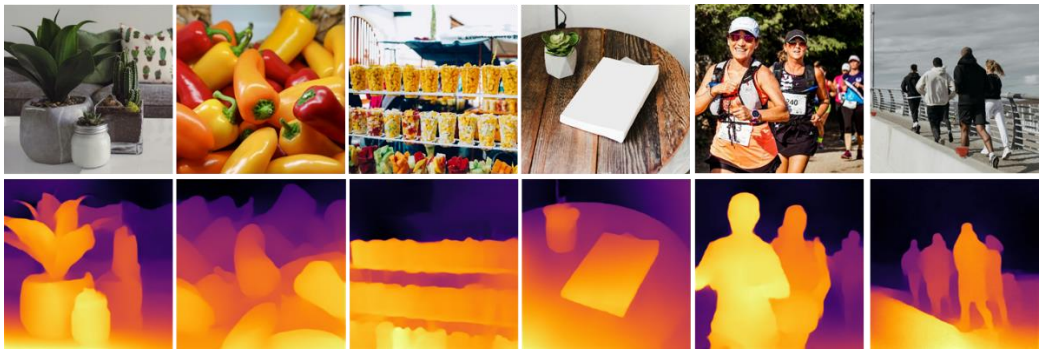
- Add new translation guide about depth estimation model
- Improve inference time of resize operator
- Support Split operator

## Contents

# 1. Improvement

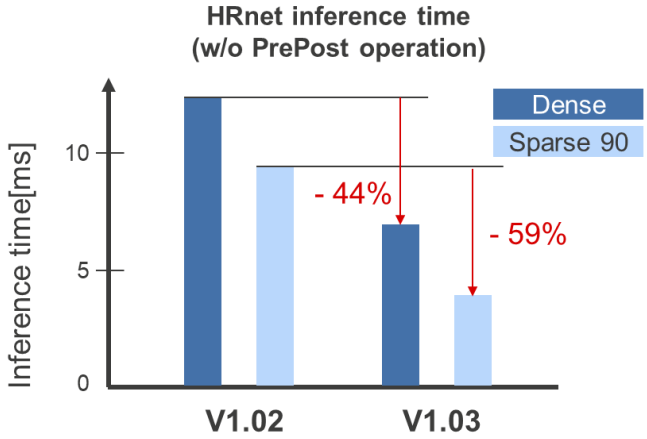
## 1.1 Add new translation guide about depth estimation model

Please see ***GettingStarted/how-to/depth_estimation*** folder in DRP-AI Transaltor i8 for the detail. Following are sample images.



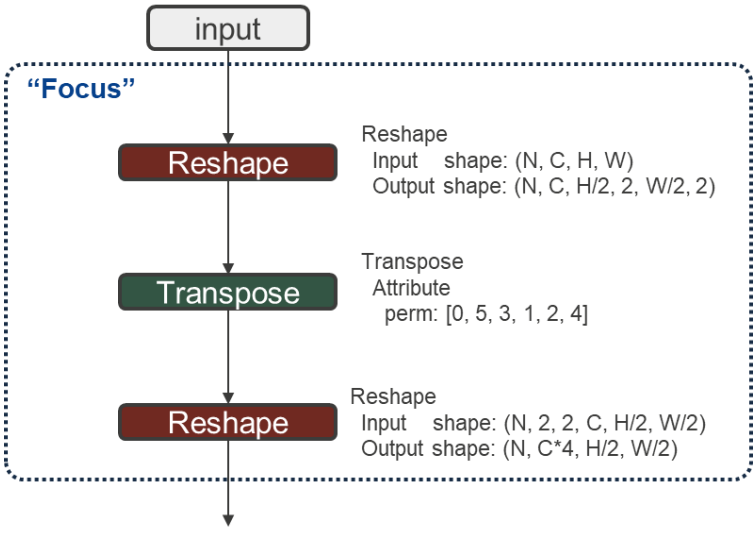
## 1.2 Optimization: *resize* operator

Improved inference time of ***resize*** operator. Especially **HRNet(Pose Estimation)** inference time has been drastically improved.




## 1.3 Operator / Attribute updates

- ***Convolution***: Newly support ker16x16, stride 16, pad [0,0,0,0] attribute
- ***Focus***: Support new pattern graph



- ***Slice***: Support new use case: "*Split*" operator equivalent processing
- ***Split***: Newly support *Split* operator
- ***Softmax***(PostProcessing): Support 3D shape input(HWC format)

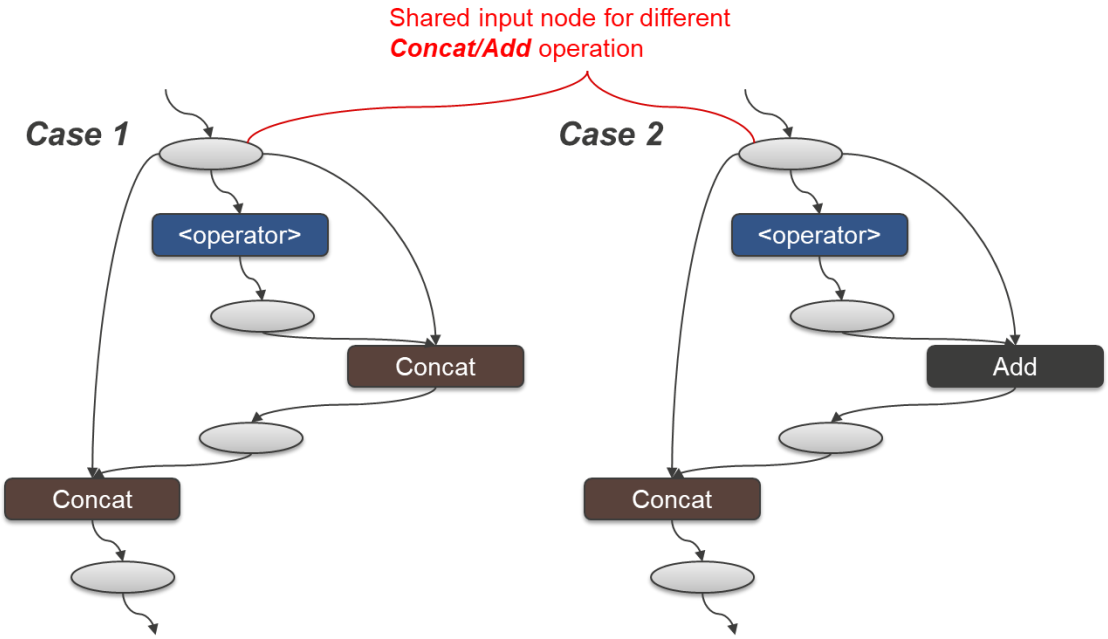
# 2. Fixed Issues

## 2.1 Operator : *Convolution, Dilated Depthwise Convolution, Sparsed Convolution*

Fixed the issues where DRP-AI object file was not generated correctly when certain combinations of heigh/width/input channel/output channel are used.

## 2.2 Graph: Shared input node for different *Concat/Add* operation

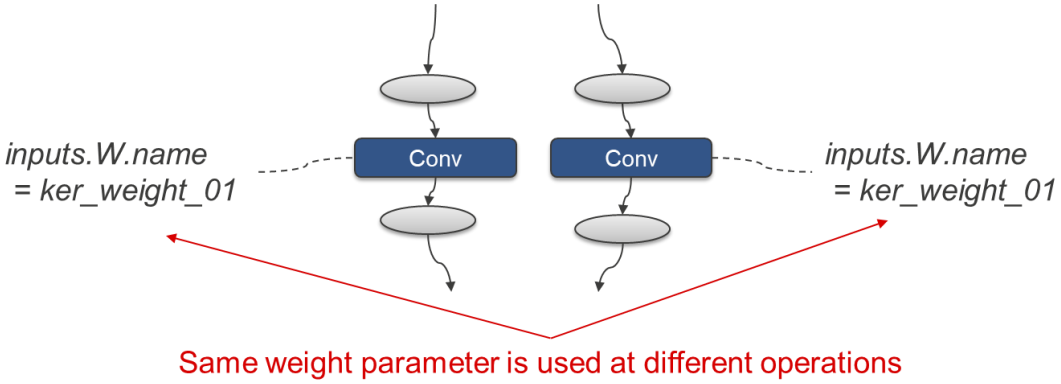
Fixed the issue that there may be errors in the inference results after *conversion*.



# 3. Known Issues

## 3.1 A weight parameter is shared with multiple *Convolution*

Translator does not support below graph structure which has *Convolutions* sharing a same weight parameters.




## 3.2 Error pattern in specific combinations of heigh/width/input channel/output channel

If the following conditions 1, 2, and 3 are true, there may be an error in the inference results.

1. operator: *Convolution* or *MaxPool* or *AveragePool*

2. (Ker%2==0) or (Ker%2!=0 & pad != (ker - 1) / 2)

3. Feature map size is large
   e.g. ih = iw = 80, ich = 512, och =512

## 4. Getting Started Guide

After installing DRP-AI Translator i8, sample pruned onnx models and the **Getting Started** guide are extracted along with the INT8 Quantizer & Translator. **Getting Started** helps you learn how to use DRP-AI Translator i8. If you use Translator i8 for the first time, please refer to *Getting_Started/README.md*. Below is a directory structure.

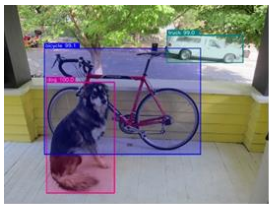
**DRP-AI_Translator_i8(install directory)**

```
├── Getting_Started  … Guide for DRP-AI Translator i8
|       ├── README.md … Overview of Getting Started
├── onnx_models      … Sample pruned onnx models
├── drpAI_Quantizer  … Root directory of INT8 Quantizer
└── translator       … Root directory of Translator
```

The Getting Started guide describes how to translate the following AI models.

| Category | AI model |
|---|---|
| Object Detection | Lightnet YOLOv2 |
| | Megvii-BaseDetection YOLOX |
| Semantic Segmentation | torchvision DeepLabv3 |
| Classification | torchvision ResNet50 |
| Human Pose Estimation | MMPose HRNet |
| Depth Estimation | PyTorch Hub MiDas (*1) |

*1: Sample pruning model is not included in DRP-AI Transaltor i8. Please follow the guide to download the model.



*Object Detection*

*Pose Estimation*

*Sematic Segmentation*