

# ONNX Pre-processing WG

Monthly meeting - May 11, 2022

# Agenda

- Status - Open issues/PRs
- Resize-17 - Antialias, axes, and keep\_aspect\_ratio\_policy
- Introduce ai.onnx.image.CenterCropPad
- Open floor

# Status - Open issues/PRs

## PRs:

Add Batch processing with SequenceMap tutorial  
<https://github.com/onnx/tutorials/pull/265>

[In progress] Add Data preprocessing with ONNX: ResNet-50 example  
<https://github.com/onnx/tutorials/pull/266>

Add Resize-17: Antialias filter, axes, and keep\_aspect\_ratio\_policy  
<https://github.com/onnx/onnx/pull/4126>

Introduce ai.onnx.image.CenterCropPad  
<https://github.com/onnx/onnx/pull/4190>

## Issues:

### ONNX runtime function inlining:

FunctionImpl should consider nested subgraphs when updating graph inputs/outputs  
<https://github.com/microsoft/onnxruntime/issues/10876>

[Solved] Error about missing type information when nesting model local function  
<https://github.com/microsoft/onnxruntime/issues/10890>

Local functions with subgraphs: GraphProto attribute inferencing error  
<https://github.com/microsoft/onnxruntime/issues/10698>

### Sequence support:

[Solved] Support for SequenceProto in ONNX parser  
<https://github.com/microsoft/onnxruntime/issues/10843>

Can't constant fold SequenceEmpty node  
<https://github.com/microsoft/onnxruntime/issues/11041>

Sequence initializers  
<https://github.com/onnx/onnx/issues/4105>

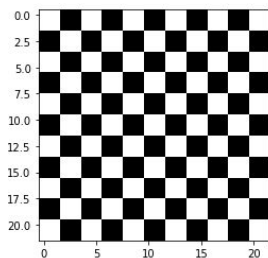
## Models:

ResNet-50 network has hardcoded batch-size 1  
<https://github.com/onnx/models/issues/509>

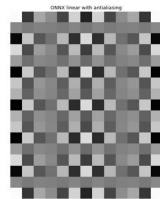
# Resize-17 - Antialias, axes, and keep\_aspect\_ratio\_policy

- antialias
  - Applies antialiasing when downscaling for linear and cubic modes
- axes
  - Allows selecting a subset of axes to resize, while keeping the rest unchanged  
HWC -> (0, 1)  
CHW -> (1, 2)
- keep\_aspect\_ratio\_policy
  - Values:
    - "stretch" (default)
    - "not\_larger" - (100, 50)  
(200, 200) -> (200, 100)
    - "not\_smaller" - (100, 50)  
(200, 200) -> (400, 200)

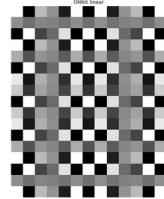
<https://github.com/onnx/onnx/pull/4126>



Resize(..., antialias=1)



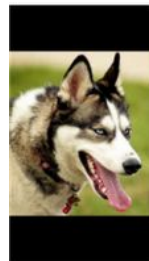
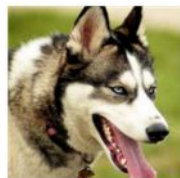
Resize(..., antialias=0)



From [22, 22, 3] to [17, 13, 3]

# Introduce `ai.onnx.image.CenterCropPad`

- New domain **`ai.onnx.image`**
- Implemented in terms of `Slice` and `Pad`
- Typically used in image data pipelines



<https://github.com/onnx/onnx/pull/4190>

Open floor