

tf.fake_quant_with_min_max_vars_per_channel_gradient

```
fake_quant_with_min_max_vars_per_channel_gradient(  
    gradients,  
    inputs,  
    min,  
    max,  
    num_bits=8,  
    narrow_range=False,  
    name=None  
)
```

Defined in `tensorflow/python/ops/gen_array_ops.py`.

See the guide: [Tensor Transformations > Fake quantization](#)

Compute gradients for a FakeQuantWithMinMaxVarsPerChannel operation.

Args:

- **gradients**: A **Tensor** of type **float32**. Backpropagated gradients above the FakeQuantWithMinMaxVars operation, shape one of: `[d]`, `[b, d]`, `[b, h, w, d]`.
- **inputs**: A **Tensor** of type **float32**. Values passed as inputs to the FakeQuantWithMinMaxVars operation, shape same as **gradients**. **min**, **max**: Quantization interval, floats of shape `[d]`.
- **min**: A **Tensor** of type **float32**.
- **max**: A **Tensor** of type **float32**.
- **num_bits**: An optional **int**. Defaults to **8**. The bitwidth of the quantization; between 2 and 8, inclusive.
- **narrow_range**: An optional **bool**. Defaults to **False**. Whether to quantize into $2^{\text{num_bits}} - 1$ distinct values.
- **name**: A name for the operation (optional).

Returns:

A tuple of **Tensor** objects (backprops_wrt_input, backprop_wrt_min, backprop_wrt_max).

- **backprops_wrt_input**: A **Tensor** of type **float32**. Backpropagated gradients w.r.t. inputs, shape same as **inputs**: `gradients * (inputs >= min && inputs <= max)`.
- **backprop_wrt_min**: A **Tensor** of type **float32**. Backpropagated gradients w.r.t. min parameter, shape `[d]`: `sum_per_d(gradients * (inputs < min))`.
- **backprop_wrt_max**: A **Tensor** of type **float32**. Backpropagated gradients w.r.t. max parameter, shape `[d]`: `sum_per_d(gradients * (inputs > max))`.

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