

tf.fake_quant_with_min_max_vars_gradient

```
fake_quant_with_min_max_vars_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 FakeQuantWithMinMaxVars operation.

Args:

- `gradients`: A **Tensor** of type `float32`. Backpropagated gradients above the FakeQuantWithMinMaxVars operation.
- `inputs`: A **Tensor** of type `float32`. Values passed as inputs to the FakeQuantWithMinMaxVars operation. `min`, `max`: Quantization interval, scalar floats.
- `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: `gradients * (inputs >= min && inputs <= max)`.
- `backprop_wrt_min`: A **Tensor** of type `float32`. Backpropagated gradients w.r.t. min parameter: `sum(gradients * (inputs < min))`.
- `backprop_wrt_max`: A **Tensor** of type `float32`. Backpropagated gradients w.r.t. max parameter: `sum(gradients * (inputs > max))`.

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