

Generative Low-bitwidth Data Free Quantization

Shoukai Xu^{1,2*}, Haokun Li^{1*}, Bohan Zhuang^{3*},
Jing Liu¹, Jiezhong Cao¹, Chuangrun Liang¹, and Mingkui Tan^{1†}

¹ South China University of Technology, Guangzhou, China
{sexsk,selihaokun,secaojiezhong,seliujing,selcr}@mail.scut.edu.cn
mingkuitan@scut.edu.cn

² PengCheng Laboratory, Shenzhen, China

³ Monash University, Melbourne, Australia
bohan.zhuang@monash.edu

A More Experimental Results

A.1 Experiments on More Networks

We conduct more experiments on different networks and report the results in Table 1. From the table, our method achieves much better performance than ZeroQ [1] in terms of accuracy at different precisions. More importantly, our method shows larger performance gain over ZeroQ at lower bit-width (e.g., W4A4) for all models. These results demonstrate the effectiveness of our method.

Table 1: Experiments on more networks on ImageNet. We quantize ResNet-50, MobileNetV2, and ShuffleNet to 6-bit and 4-bit, and report the Top-1 accuracy.

	ResNet-50			MobileNet V2			ShuffleNet		
	FP32	W6A6	W4A4	FP32	W6A6	W4A4	FP32	W6A6	W4A4
ZeroQ	77.72	72.86	0.12	73.03	69.62	3.31	65.07	46.25	0.27
Ours	77.72	76.59	55.65	73.03	70.98	51.30	65.07	60.12	21.78

A.2 Comparisons with DFQ

We implement the algorithm in DFQ [2] and report the results in Table 2. Our method achieves much higher performance than DFQ, especially in low bit-width.

* Authors contributed equally.

† Corresponding author.

Table 2: Comparisons with the DFQ method. We quantize MobileNetV2 and ResNet-18 to 8-bit, 6-bit and 4-bit, and report the Top-1 accuracy on ImageNet.

	MobileNet V2				ResNet-18			
	FP32	W8A8	W6A6	W4A4	FP32	W8A8	W6A6	W4A4
DFQ	73.03	66.06	52.82	0.11	71.74	70.13	14.67	0.10
Ours	73.03	72.80	70.98	51.30	71.74	70.68	70.13	60.52

References

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