Preliminary results

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1 Dataset
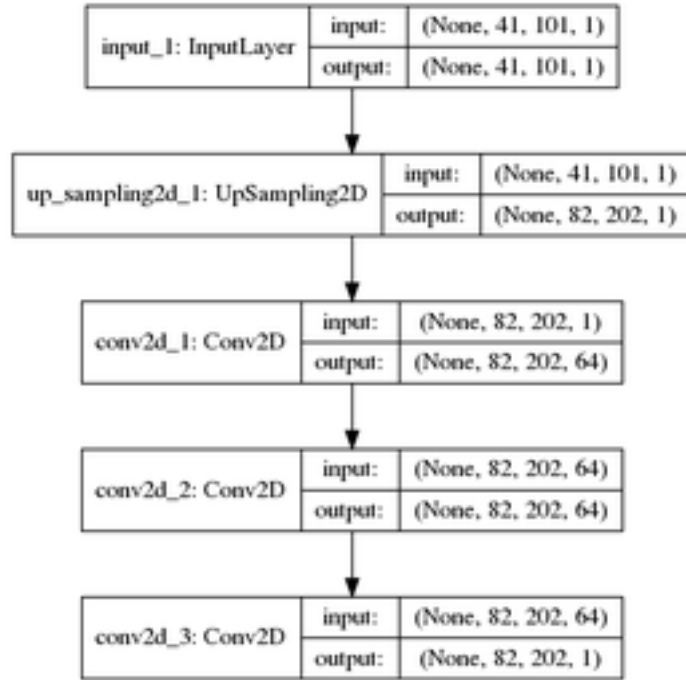
1.1 First dataset

We have 99800 pairs of size (41,101) and (82,202). We take 90% of the dataset for training and 10% for validation.
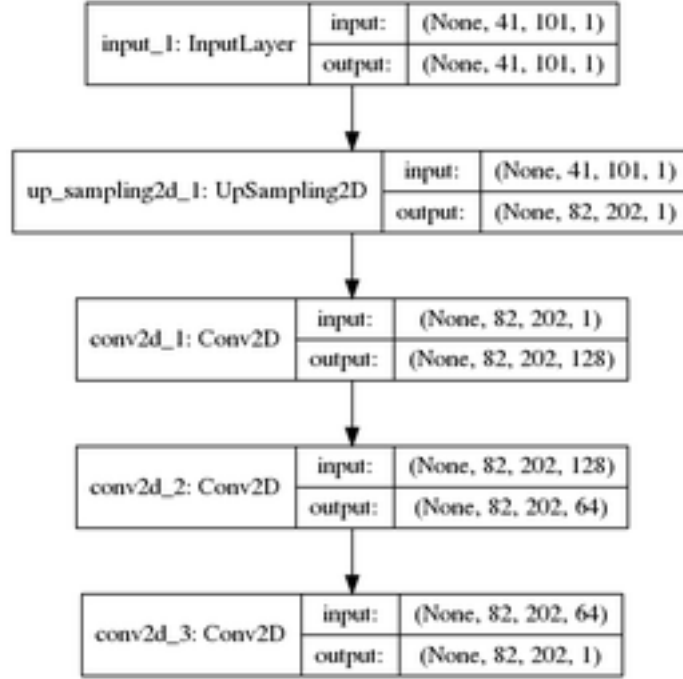
1.2 Second dataset

We have 199600 pairs of size (41,101) and (82,202). We take 90% of the dataset for training and 10% for validation.

2 Models

2.1 Small model

input_1: InputLayer	input:	(None, 41, 101, 1)
	output:	(None, 41, 101, 1)

up_sampling2d_1: UpSampling2D	input:	(None, 41, 101, 1)
	output:	(None, 82, 202, 1)

conv2d_1: Conv2D	input:	(None, 82, 202, 1)
	output:	(None, 82, 202, 64)

conv2d_2: Conv2D	input:	(None, 82, 202, 64)
	output:	(None, 82, 202, 64)

conv2d_3: Conv2D	input:	(None, 82, 202, 64)
	output:	(None, 82, 202, 1)

2.2   Larger model

| input_1: InputLayer | input: | (None, 41, 101, 1) |
| | output: | (None, 41, 101, 1) |

| up_sampling2d_1: UpSampling2D | input: | (None, 41, 101, 1) |
| | output: | (None, 82, 202, 1) |

| conv2d_1: Conv2D | input: | (None, 82, 202, 1) |
| | output: | (None, 82, 202, 128) |

| conv2d_2: Conv2D | input: | (None, 82, 202, 128) |
| | output: | (None, 82, 202, 64) |

| conv2d_3: Conv2D | input: | (None, 82, 202, 64) |
| | output: | (None, 82, 202, 1) |

3 Results with MSE

3.1 Small dataset

3.1.1 Small model

Model	MSE	PSNR
Baseline	0.04340910539031029	13.252154350280762
Our model	0.014259712770581245	18.50780487060547

3.1.2 Larger model

Model	MSE	PSNR
Baseline	0.04340910539031029	13.252154350280762
Our model	0.014002162031829357	18.848854064941406

3.2 Larger dataset

3.2.1 Small model

Model	MSE	PSNR
Baseline	0.05499911680817604	13.193048477172852
Our model	0.012363090179860592	19.295167922973633

3.2.2 Larger model

Model	MSE	PSNR
Baseline	0.05499911680817604	13.193048477172852
Our model	0.008242517709732056	20.250873565673828

4 Results with PSNR

4.1 Small dataset

4.1.1 Small model

Model	PSNR	MSE
Baseline	13.252154350280762	0.04340910539031029
Our model	18.50320816040039	0.014582881703972816

4.1.2 Large model

Model	PSNR	MSE
Baseline	13.252154350280762	0.04340910539031029
Our model	18.32445526123047	0.014021050184965134

5 Results with SSIM

5.1 Small dataset

5.1.1 Small model

Model	SSIM	MSE
Baseline	0.22483927011489868	0.04340910539031029
Our model	0.10188096761703491	0.020401673391461372

5.1.2 Large model

Model	SSIM	MSE
Baseline	0.22483927011489868	0.04340910539031029
Our model	0.09187829494476318	0.020459705963730812