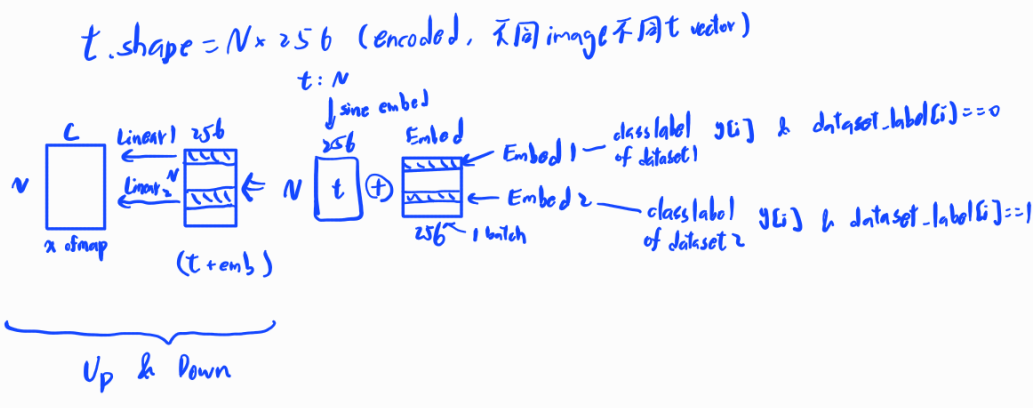
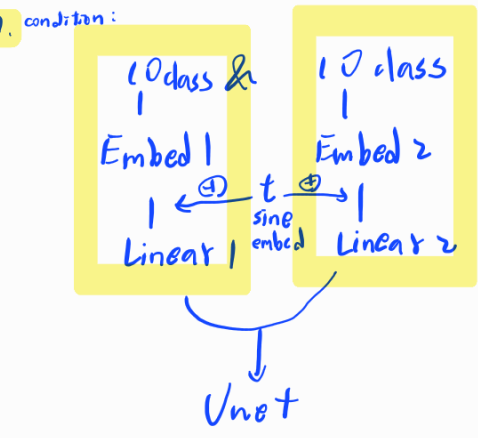


⑥ 2-condition in 1 diffusion model results



Unet: same as dome272, 3 \downarrow down
T=1000 W=3
train: 11min/epoch inference: 4min/50 image result: bad

2. condition: combine 2 datasets \Rightarrow 20 classes

Unet: same as dome272, 3 \downarrow down
T=1000 W=0
train: 8min/epoch inference: 24min/1000 image result: acc: $\frac{81+58}{2} = 70$
Total 45 epochs
T=400
inference: 40 sec/50 image

3. condition: combine 2 datasets \Rightarrow 20 classes

Unet: model 改小, 2 \downarrow down
T=400 W=0
train: 4min/epoch inference: 5min/1000 image result: acc: $\frac{80+71}{2} = 75.5$
Total 50 epochs

4. condition: combine 2 datasets \Rightarrow 20 classes

Unet: based on version 3, 改大 channel
T=400 W=0
train: 7m50s/epoch inference: 9min/1000 image
Total 100 epochs
result: acc: $\frac{82.8+71}{2} = 76.9$ @ epoch 99, loss=0.0283
acc: $\frac{50+52}{2} = 51.2$ @ epoch 30, loss=0.03
acc: $\frac{12.6+9.2}{2} = 10.9$ @ epoch 0, loss=0.10

5. condition: combine 2 datasets \Rightarrow 20 classes

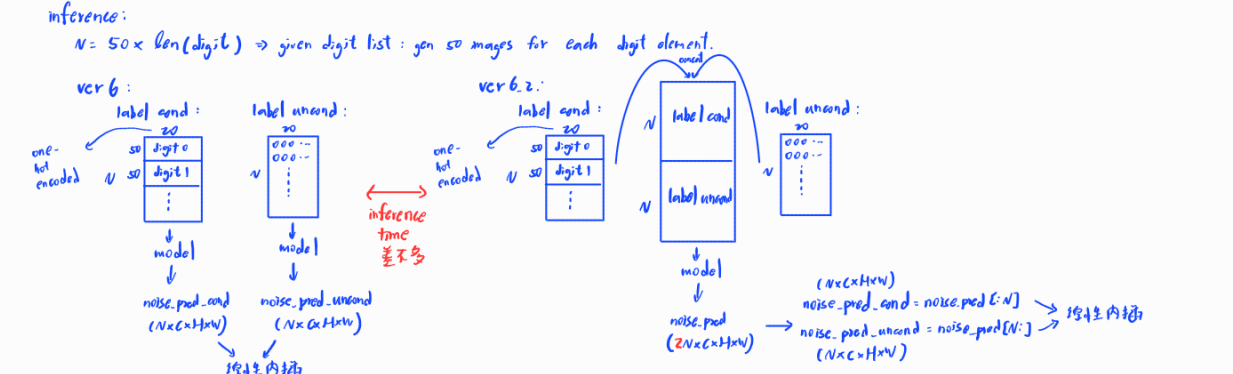
Unet: based on v1 & v2, but add up & down & up & up 1 do not change size (so input size can be 28x28)
T=500 W=0
train: 6min/epoch inference: 8m53s/1000 image
Total 19 epochs
result: acc: 65.8 @ epoch 19, loss=0.03
• train 10% uncond 1 epoch: 10% uncond acc: $\frac{12.8+10.8}{2} = 11.8$
1% uncond 1% uncond acc: $\frac{10.4+10.4}{2} = 10.4$

final version 6. condition: combine 2 datasets \Rightarrow 20 classes

Unet: 使用另一版 model with higher capacity (ref: byrkbk) \Rightarrow feat=128, down=2
T=350 W=2
train: 6min/epoch inference: 11m30s/1000 image (using torchograd, bs, ver6, ver6.2 inference time 差不多)
Total 80 epochs
result: acc: 99.3

⑥ T=400, n_feat=144
bs 200 > bs 1000 > bs 500 > bs 20
fastest \uparrow v6 \uparrow slowest

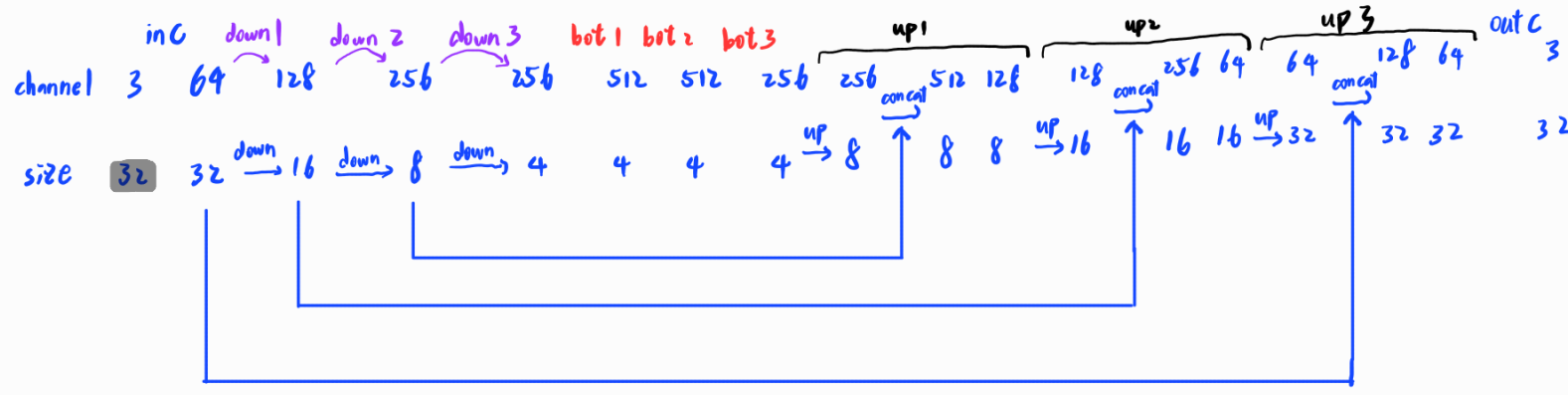
v6 bs=1000
cond: not (bs=1000) \rightarrow hcl (bs=2000)
uncond: hcl (bs=1000)



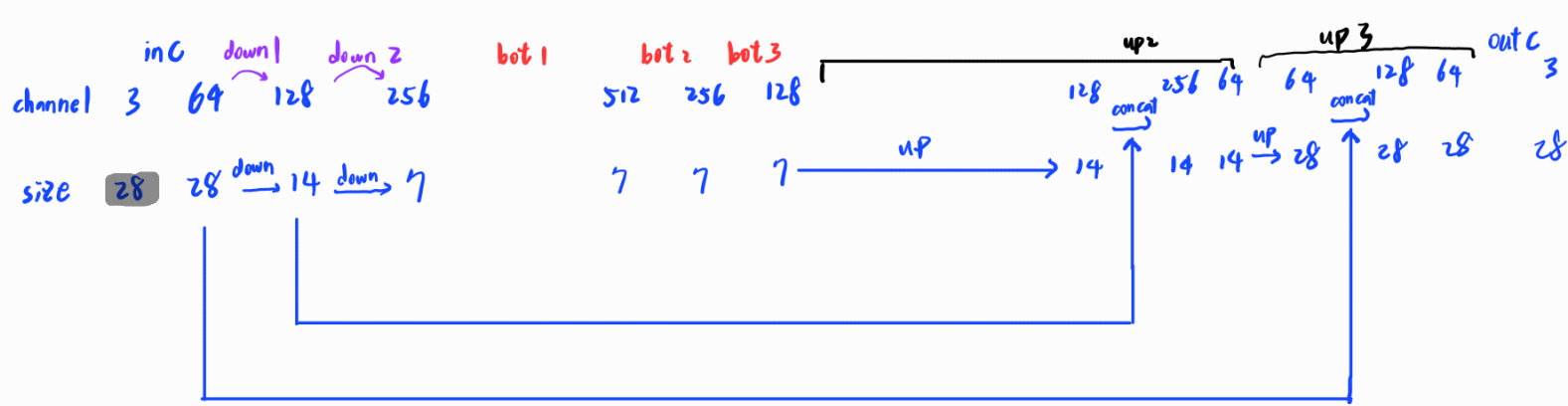
v1 ~ v5 : ref: <https://github.com/dome272/Diffusion-Models-pytorch> → model capacity 不多, 或 model 架构问题: train 不上去

v6 : ref: <https://github.com/byrkbkr/conditional-ddpm/blob/main/models.py> → acc: 99.3% @ down = 2 n_feat = 128 n_cfent = 20

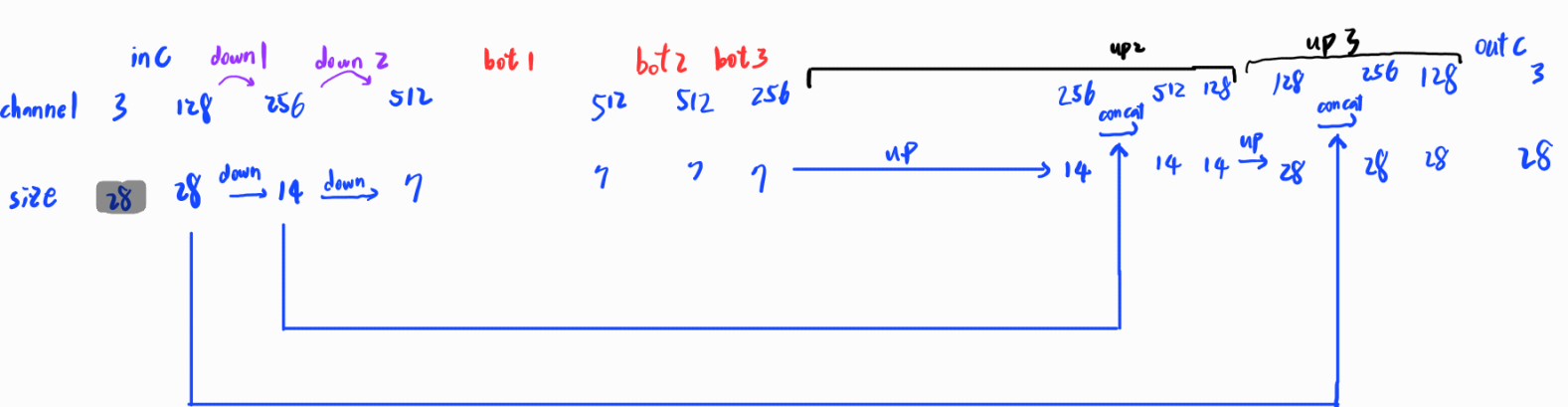
ref: dome272
original Vnet from github source code: (ver1, 2)



version3:



version4:



ver5

