# AGENDA

i) Transfer learning. ( Theory )
ii) Transfer learning. (Practical)
iii) CNN example (Practical)
iv) Project Setup CNN. ( DUC )

Model 1

Flowers (100) → modified version → Model 2

Lily Sunflower

Model 1 ✓

MNIST 0 → 9

Model 2 ✓

Odd, even

Students (DS)

Python, ML, ANN

Now, (DS)

Learning CNN ✓

Student

Web Dev

CNN (its possible but it will take more time)

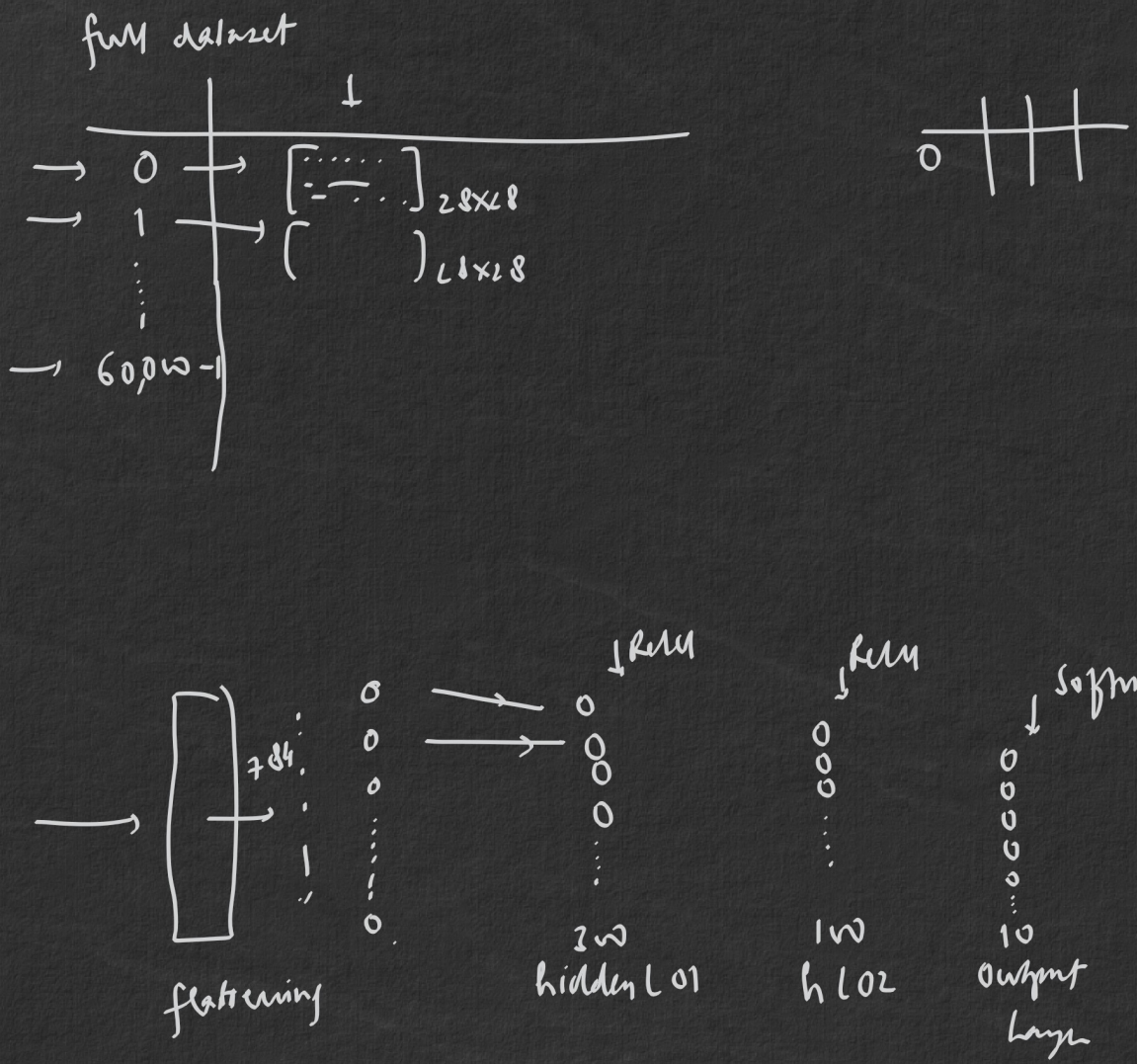
Healthcare Domain

XRay → Model *

Chest Xray

60,000 ---- 1st row → 28×28

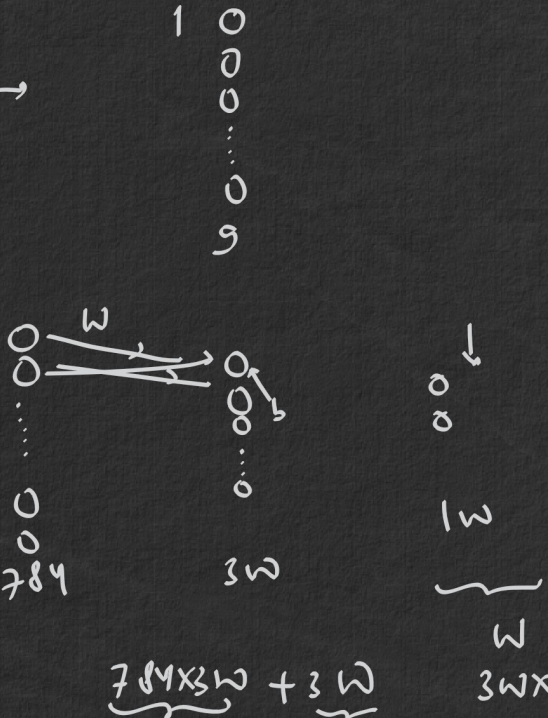
(60000, 28, 28)

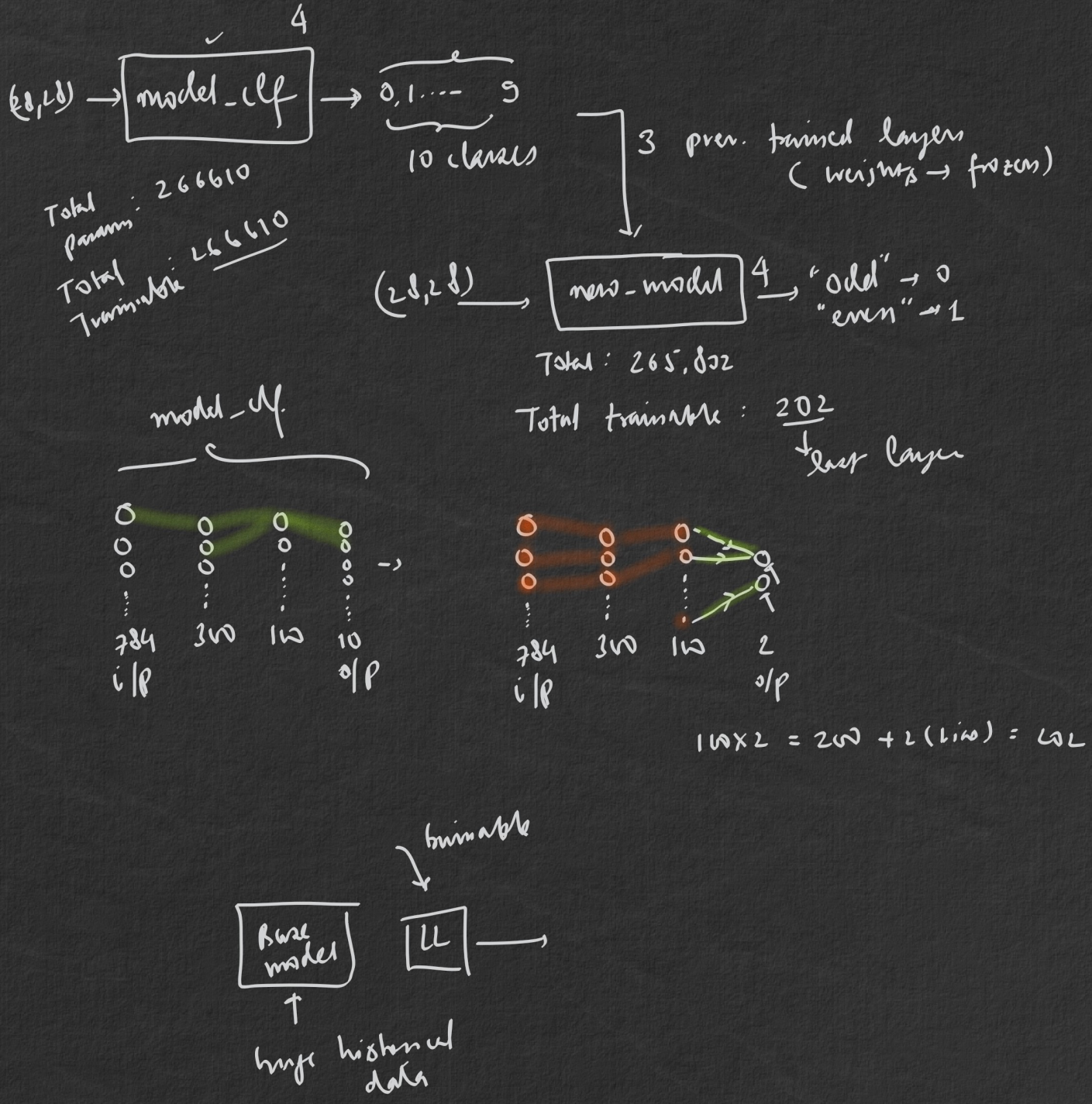




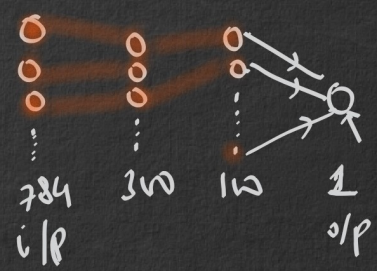
ML

| | C1 C2 ... C9 |
|---|---|
| 0 | [1, 2, 5 ... 9,] |




4
(28,28)
model_clf
0,1.... 9
10 classes
Total params: 266610
Total Trainable: 266610
3 prev. trained layers
(weights → frozen)
(28,28)
new_model
4
"odd" → 0
"even" → 1
Total: 265,802
Total trainable: 202
last layer
model_clf
784
i/p
300
100
10
o/p
784
i/p
300
100
2
o/p
100×2 = 200 + 2(bias) = 202

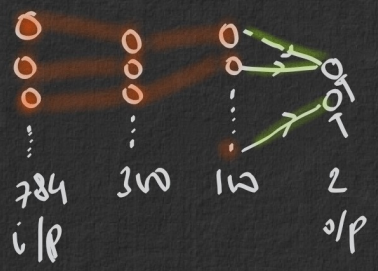

trainable
Base model
LL
huge historical data




$100 \times 1 + 1$

$= 101$

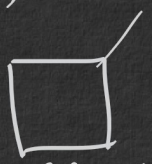
Loss function : Binary cross entropy




$200 \times 2 + 2 = 202$

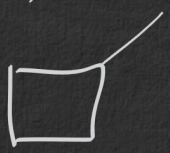
loss fn: sparse - categorical cross entropy.

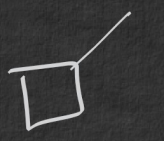
(28x28,1) ⟶ Input Layer ⟶ Conv 2D (32, 3,3) → ⟶ Max pooling →



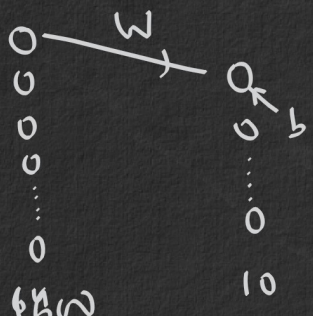
⟶ Conv 2D (64,3,3) → ⟶ Maxpooling 2D




⟶

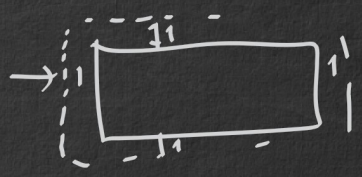
5x5x64 = 1600




$W = 1600 \times 10$

$b = 10$

$= 16010$




$\leq$ $2p$ $2(1)=2$