ANN & CNN Best Practices

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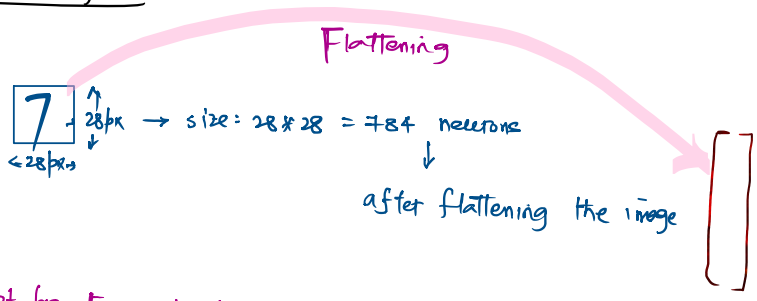
ANN: Artificial Neural Networks

To decide the number of hidden layers' and its respective size (# neurons)

Input layer



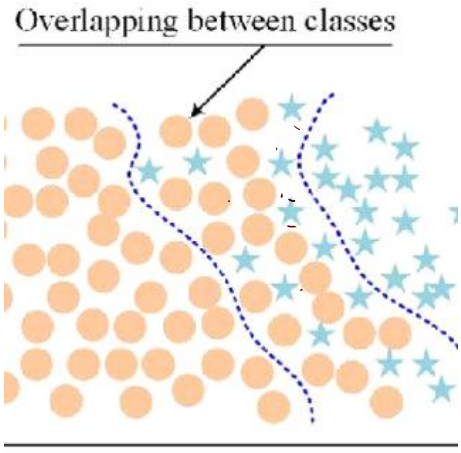
Best practice: keep input layer size = no. of features / pixels in the image

Hidden layer (How many layers?)

# Hidden layers	When to use	Best practice
1 Hidden layer	simple models/tasks like running an MNIST model (less than 100K images)	start with 2^7 or 2^8 neurons → (128) (256)
2 Hidden layers	Moderately complex patterns (400-500K) 0.5 million images	1st layer → 2nd layer: 128 → 64; 256 → 128
3 or more than hidden layers	use only if accuracy is stuck or for deep learning model with large datasets	Add layers gradually and continuously monitor for overfitting → More # layers ⇒ more risk of overfitting

1st layer 2nd layer 3rd layer

Input → 256 → 128 → 64 → output



→ Binary classification problem

Distribution is complex !!!.