



Data Structures Algorithms Interview Preparation Topic-wise Practice C++ Java Python

	ANN	CNN	RNN
Type of Data	Tabular Data, Text Data	Image Data	Sequence data
Parameter Sharing	No	Yes	Yes
Fixed Length input	Yes	Yes	No
Recurrent Connections	No	No	Yes
Vanishing and Exploding Gradient	Yes	Yes	Yes
Spatial Relationship	No	Yes	No
Performance	ANN is considered to be less powerful than CNN, RNN.	CNN is considered to be more powerful than ANN, RNN.	RNN includes less feature compatibility when compared to CNN.
Application	Facial recognition and Computer vision	Facial recognition, text digitization and Natural language processing	Text-to-speech conversions.



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Vanishing and Exploding Gradient

Yes

Yes

Yes

Spatial Relationship

No

Yes

No

Performance

ANN is considered to be less powerful than CNN, RNN.

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Application

Facial recognition and Computer vision.

Facial recognition, text digitization and Natural language processing.

Text-to-speech conversions.

Main advantages

Having fault tolerance, Ability to work with incomplete knowledge.

High accuracy in image recognition problems, Weight sharing.

Remembers each and every information, Time series prediction.

Disadvantages



Hardware dependence, Unexplained behavior of the network.

Large training data needed, don't encode the position and orientation of object.

Gradient vanishing, exploding gradient.

