LDA :

- Linear Discriminant Analysis is a unsupervised learning Algorithm
- Linear Discriminant Analysis is one of the commonly used dimensionality reduction technique

Types (or) Extensions of LDA

- Quadratic Discriminant Analysis
- Flexible Discriminant Analysis

Advantages

Manifold learning

- it is a subfield of machine learning based on the assumption that one's observed data lie on a low-dimensional manifold embedded in a higher-dimensional space.

Metric learning

- metric learning is a approach based directly on a distance metric that aims to establish similarity or dissimilarity between images.

Batch Normalization

- Batch Normalization is a process to make the networks faster and more stable through adding extra layers in deep learning Network
- The normalizing process in batch normalization takes place in batches not in a single input.

Feature reduction techniques

1. Feature selection
   - filter method
   - wrapper method
   - Embedded
2. Feature Extraction
   - PCA
   - LDA
   - QDA

STN

- Spatial transformer networks
- STN allow a neural network to learn how to perform spatial transformations on the input image in order to enhance the geometric invariance of the model.

Deep Reinforcement learning

- Deep Reinforcement learning is a subfield of machine learning that combines reinforcement learning and deep learning.
- it is useful in problems with high-dimensional state space

Hyperparameter optimization

- It is a process of finding the right combination of hyperparameter values to achieve maximum performance on the data in a reasonable amount of time.
- Hyperparameter is an essential part of controlling the behavior of a machine learning model.

Computational artificial neuroscience

- Computational neuroscience works to identify dynamic neural networks to understand the principles that govern neural systems and brain activity, potentially related to information processing and brain disease.