CDT402-Deep Learning for Data Science

Module 5

1. Is an autoencoder for supervised learning or for unsupervised learning? Explain briefly.
2. List the difference between Boltzmann Machine and Deep Belief Network.
3. How does the variational auto-encoder architecture allow it to generate new data points, compared to auto-encoder, which cannot generate new data points?
4. Why do autoencoders fail to generate realistic new data, and how do VAEs overcome this limitation?
5. Generative Adversarial Networks(GANs) include a generator and a discriminator. Sketch a basic GAN using those elements, a source of real images, and a source of randomness.
6. The word “adversarial” in the acronym for GANs suggests a two-player game. What are the two players, and what are their respective goals?
7. Explain auto encoder with an example.
8. Explain Generative Adversarial Networks using suitable diagram.How can GANs help in improving model performance on imbalanced datasets?
9. Compare Denoising Autoencoders and Regularized Autoencoders.
10. Explain the Deep belief Networks and their significance in the field of deep learning.
11. Explain the concept of Variational Autoencoders.
12. Discuss the applications of GAN.
13. Describe Boltzmann Machines. How do they learn and generate samples in a probabilistic manner?
14. Explain Denoising Autoencoders.
15. List out the applications of GAN. With the help of a diagram, explain the training process of Generative Adversarial Networks (GANs) and the adversarial relationship between Generator and Discriminator.
16. Compare Boltzmann machine and traditional neural network?
17. Explain the basic idea behind generative models and how they differ from discriminative models.
18. Compare undercomplete autoencoders and regularized autoencoders.