Module 6 – Basics of Neural Networks - Overview

**“The Basics of Neural Networks”** are the foundational elements that make these models so powerful for machine learning and artificial intelligence. Neural networks are inspired by the human brain and consist of interconnected nodes, or neurons, organized into layers. Each neuron processes input data and passes it through an activation function to produce an output. Key components include input layers, hidden layers, and output layers. Training a neural network involves feedforward propagation, calculating the error using a loss function, and backpropagation to adjust weights and biases. These networks excel in tasks like image and speech recognition, natural language processing, and more, making them crucial for various advanced applications. Here are some key points I learned during this module.

* **Foundation of Neural Networks**: Inspired by the human brain, consisting of interconnected nodes (neurons) organized into layers.
* **Structure of Neural Networks**: Key components: input layers, hidden layers, and output layers.
* **Training Process**: Feedforward propagation, calculating error with a loss function, and backpropagation to adjust weights and biases.
* **Applications**: Excelling in tasks like image and speech recognition, natural language processing, and various advanced applications.