

Introduction to Neural Networks

Neural networks are computational models inspired by the human brain. They consist of layers of interconnected nodes, or "neurons", which process data and adjust weights through training to perform specific tasks.

Key Concepts:

- Perceptrons
- Activation Functions (ReLU, Sigmoid, Tanh)
- Loss Functions
- Backpropagation
- Gradient Descent

Neural networks are widely used in classification, regression, and pattern recognition problems.

Deep neural networks (DNNs) refer to architectures with multiple hidden layers.

Applications include:

- Image recognition
- Natural language processing
- Recommendation systems