

RESEARCH SYNOPSIS

ON

NEURAL NETWORKS

**Submitted To: Submitted By:**

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**TITLE:**

Neural networks

**INTRODUCTION:**

Neural networks are a type of machine learning model that is inspired by the structure and function of the human brain. These models are composed of interconnected nodes, or "neurons," which are inspired by biological neurons in the brain. In a neural network, these nodes use weighted connections to process inputs and generate output.

Neural networks are particularly useful for tasks that involve complex patterns or relationships, such as image recognition and natural language processing. They have been used extensively in a variety of fields, including computer vision, speech recognition, and natural language processing.

One of the key advantages of neural networks is their ability to learn from data. Through a process called training, a neural network can adjust its weights and biases to better fit the data. This allows the network to improve its performance on the task it was trained for, such as recognizing images or translating text.

In recent years, advances in deep learning have led to significant improvements in the performance of neural networks. Deep learning involves using neural networks with multiple layers, allowing the network to learn more complex patterns and relationships in the data. This has led to impressive results in a variety of applications, including image and speech recognition.

Overall, neural networks are a powerful tool for machine learning and have been widely used in a variety of applications. They show great promise for solving complex problems and improving our ability to make sense of data.

**OBJECTIVE:**

The objectives of this review paper on neural networks include:

1. To provide an overview of the history and development of neural networks.
2. To describe the key components of neural networks, including neurons, connections, and weights.
3. To discuss the various types of neural networks and their applications.
4. To review the latest advances in neural network research, including developments in deep learning.
5. To evaluate the current state of the field and identify areas for future research.
6. To provide practical guidance for researchers and practitioners on how to use neural networks in their work.

Signature of Mentor Signature of Student