

# AI Terminology 101:

## **Neural Network:**

A computational model inspired by the structure and function of the human brain, used for various AI tasks, including image and speech recognition.

## **Convolutional Neural Network (CNN):**

A neural network architecture optimized for image and video processing tasks.

## **Recurrent Neural Network (RNN):**

A neural network architecture designed for sequence data, such as time series or natural language.

## **Artificial Neural Network:**

A computational model inspired by the human brain's neural structure, used in much of machine learning, and is the basis of deep learning.

## **Data:**

The foundation of AI, data includes information used for training, testing, and feeding AI models. (Teacher – provide real world examples of data, whatever you are most comfortable talking about)

## **Training Data:**

The dataset used to teach an AI model and help it learn patterns.

## **Testing Data:**

A separate dataset used to evaluate an AI model's performance after training.

## **Supervised Learning:**

A machine learning approach where the model learns from labeled training data (input-output pairs).

## **Supervised Learning Algorithm:**

Algorithms like linear regression, decision trees, and support vector machines used in supervised learning.

## **Unsupervised Learning:**

A machine learning approach where the model learns patterns from unlabeled data, typically used for clustering and dimensionality reduction.

## **Reinforcement Learning:**

A machine learning paradigm where agents learn by interacting with an environment and receiving rewards or punishments.

## **Hyperparameter:**

Parameters that are set before training an AI model, affecting its performance, such as learning rate or number of layers.

## **Model Evaluation:**

The process of assessing an AI model's performance using various metrics like accuracy, precision, recall, or F1-score.

## **Transformers:**

An AI transformer is a model architecture designed to process sequential data in a manner that is both parallelizable and highly efficient. Introduced in the paper "Attention Is All You Need" by Vaswani et al. in 2017, transformers have become the foundation for a wide range of applications in natural language processing, such as machine translation, text summarization, and sentiment analysis, as well as in other domains like image recognition and generative tasks.

## **Transfer Learning:**

A technique where a pre-trained model is adapted for a different task, saving time and resources.