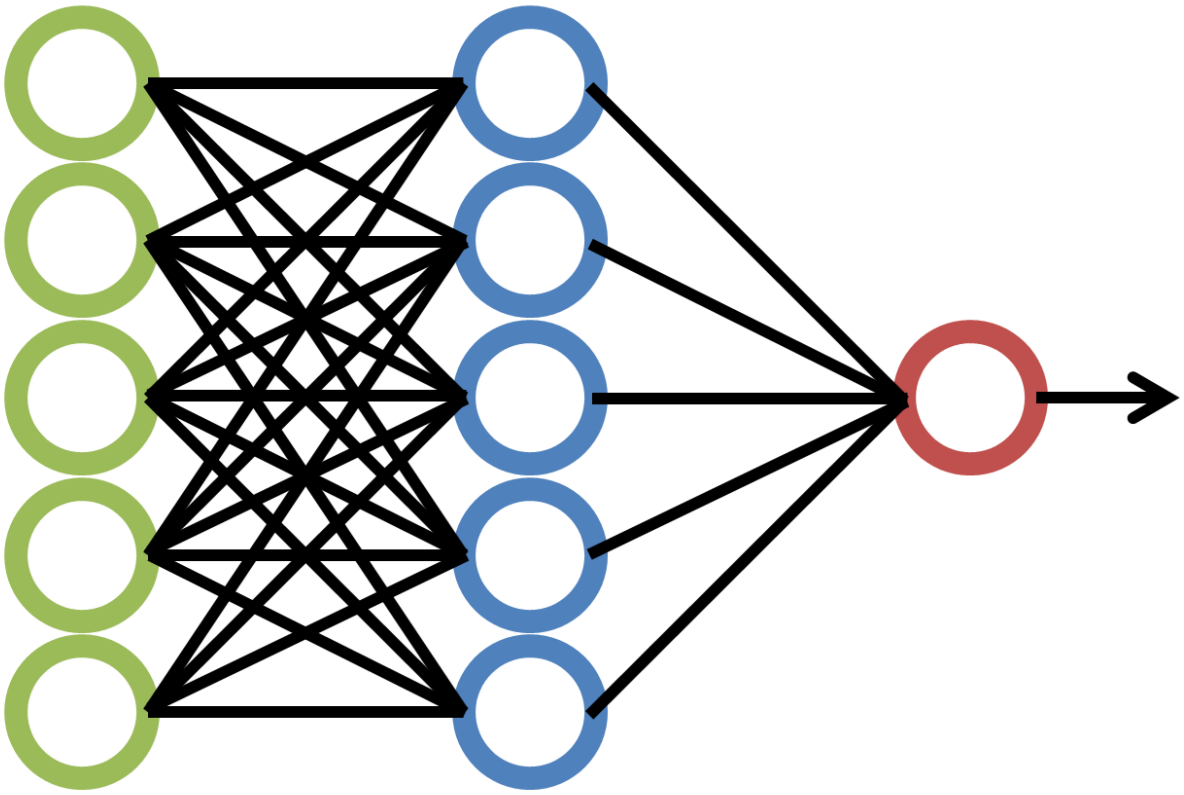

Image Classification Using Deep Learning Models

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Introduction:

In an era marked by rapid technological advancement, image classification has gained critical importance in various industries. This process involves assigning labels to images based on their visual content. Deep learning, a subset of machine learning, has revolutionized this field by introducing neural network architectures capable of understanding complex image patterns. Convolutional neural networks (CNNs) stand out for their hierarchical feature extraction capabilities.

The goal of this report is to explore image classification using deep learning models. These models have the ability to learn from extensive datasets and achieve exceptional accuracy in categorizing images. The report delves into the foundations of deep learning, CNN architecture, data preprocessing, and model training, offering insights into practical implementation and transfer learning.The report acknowledges the ongoing evolution of this field, where advancements in hardware and methodologies continually enhance the accuracy and versatility of image classification. By understanding these models, applications, and limitations, we can tap into new dimensions of visual understanding and drive innovation across various sectors.

In the following sections, the report uncovers the intricacies of using deep learning for image classification. It equips readers with the knowledge needed to tackle image classification challenges and contribute to the continued progress in this dynamic domain.

Goals and Objectives:

- Understanding deep learning
- Understanding the concepts of tuning deep learning models
- Creating a high efficiency and more accurate model.

Steps and Procedures:

1. Data Collection:

Data was collected from kaggle.

2. Data Conversion:

Image data was converted into pixel values and labels were encoded.

3. Findings Compilation:

Data was in pixels and had multiple channels.

Results and Analysis:

The model building revealed the accuracy, f1 score , recall and deviation in loss functions.

Conclusion:

In conclusion the increase in model layer increases accuracy. Using different activation functions helped in increasing accuracy. So for better model building of dnn models, more layers would be required with desired activation functions for required results.