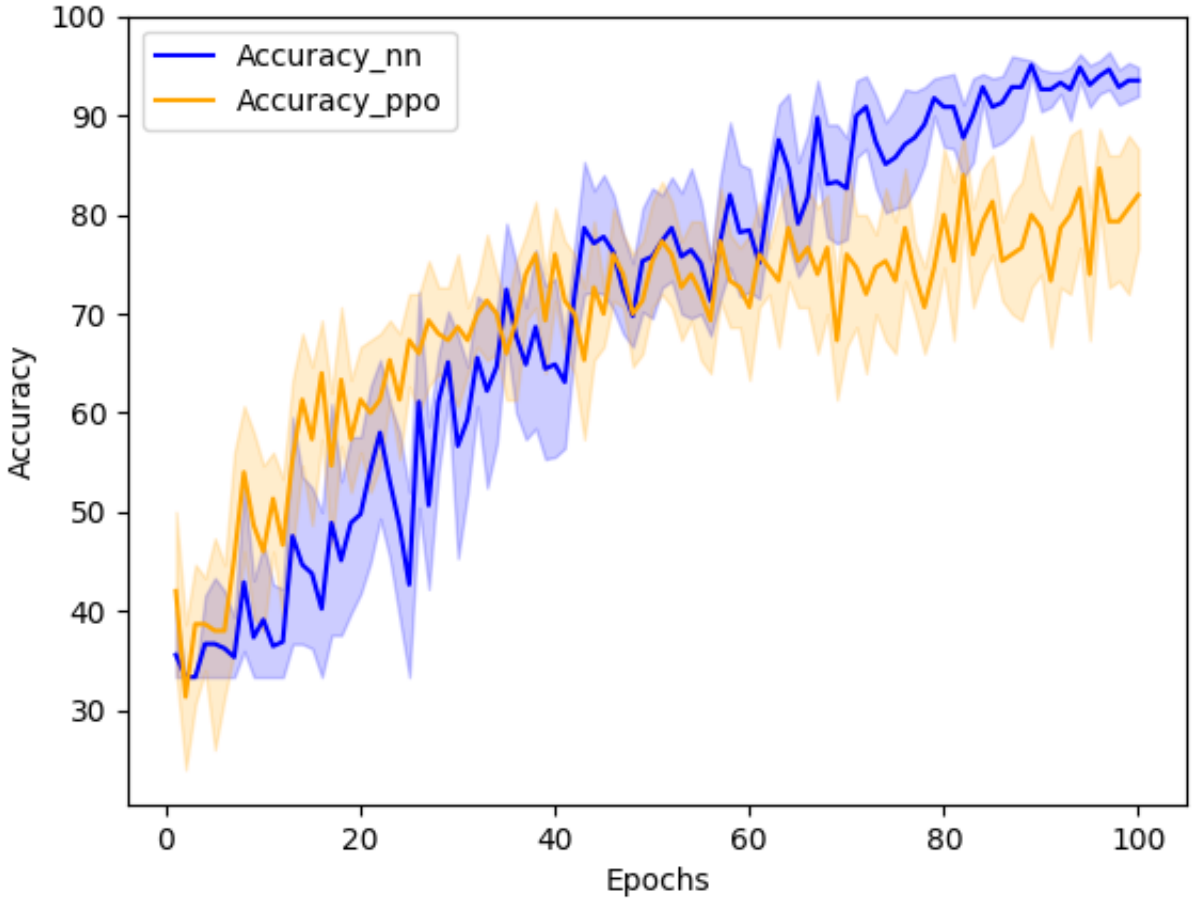
# Comparisons between Gradient Descent and Reinforcement Learning in terms of classification

Corina Dimitriu, Bianca Buzilă, Leonard Rumeghea, Antonio Iațu

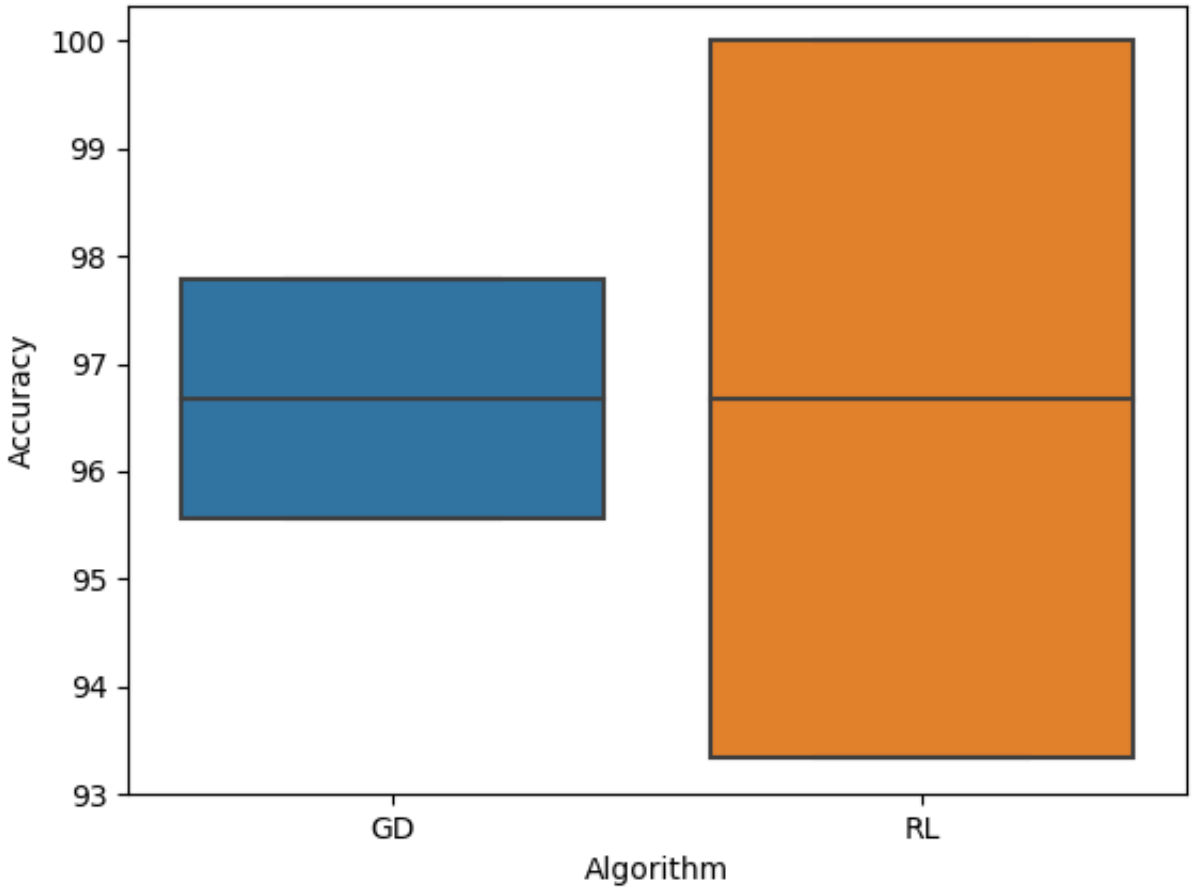
January 2023

## 1 Iris Dataset

### 1.1 Lineplot - comparison between GD and RL in classifying Iris Dataset

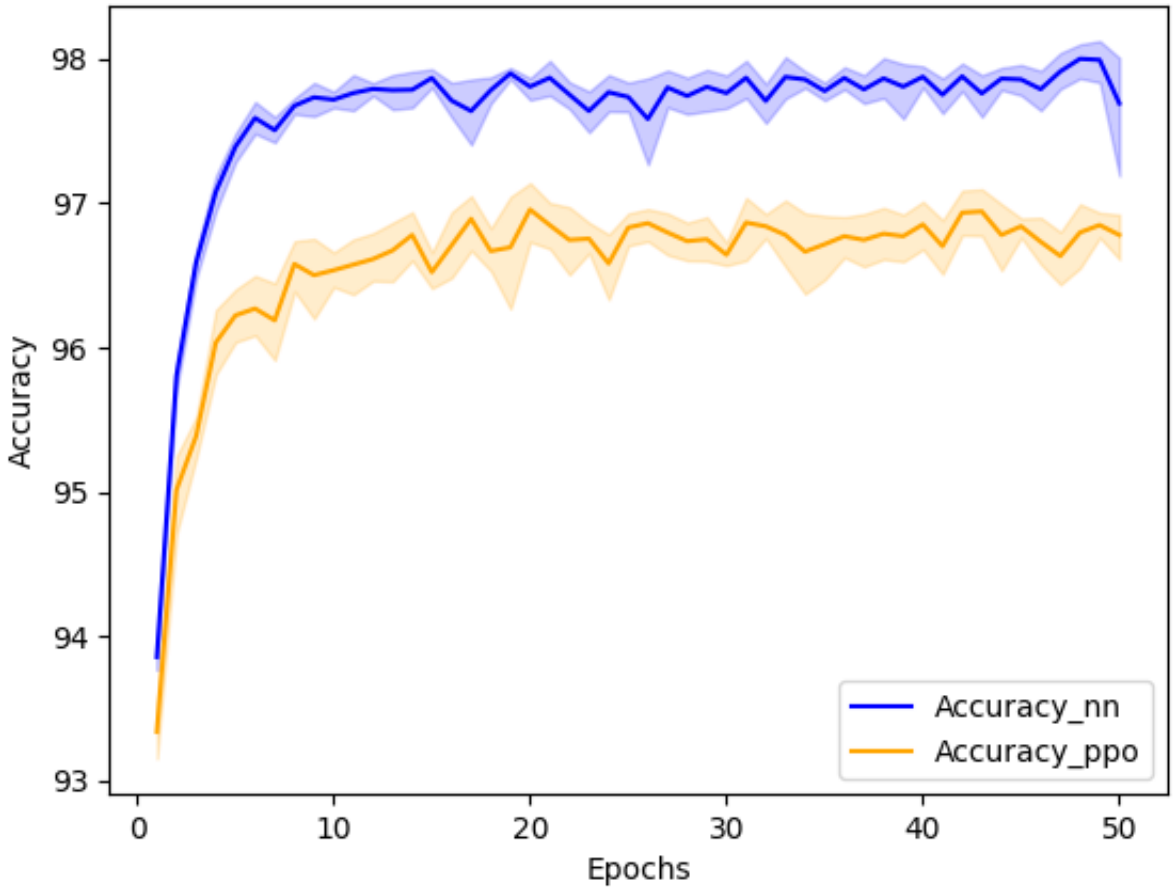


### 1.2 Boxplot - comparison between GD and RL in classifying Iris Dataset

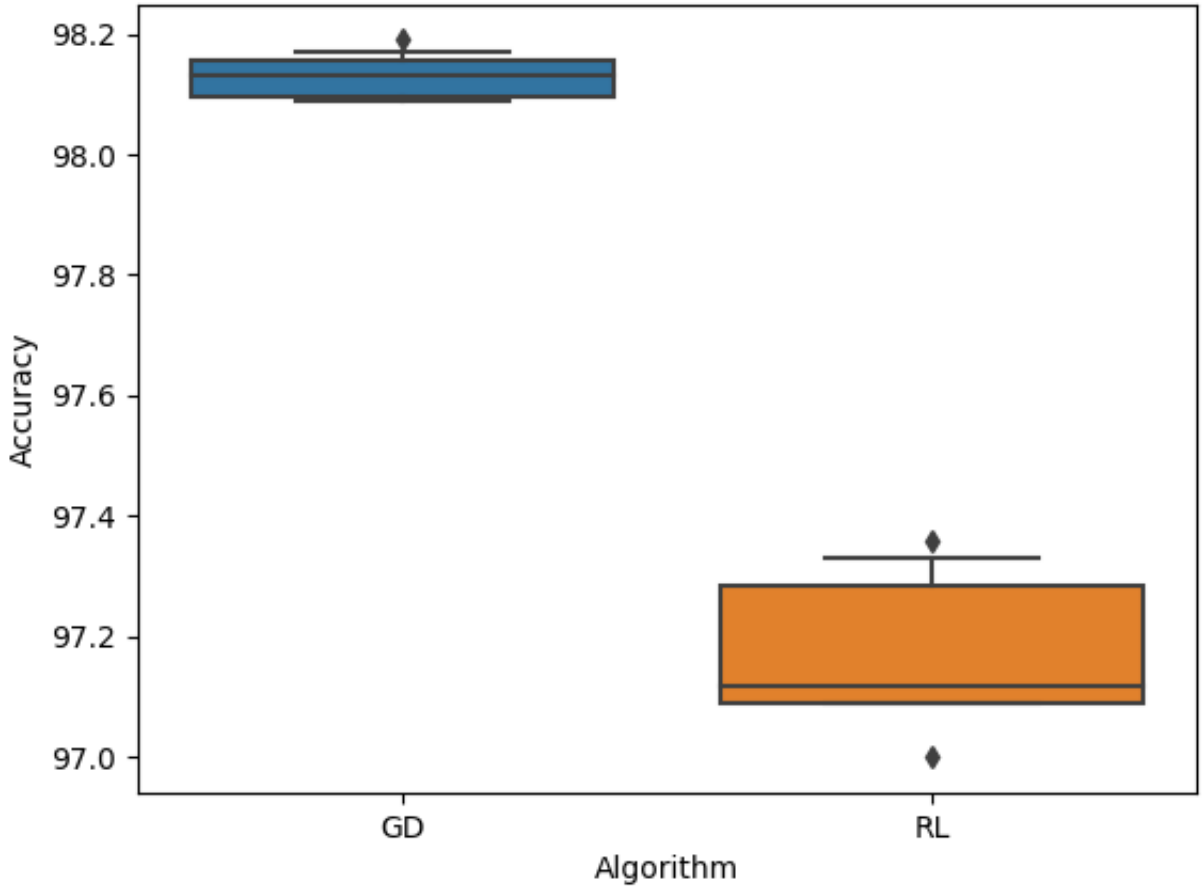


# 2 Mnist Dataset

## 2.1 Lineplot - comparison between GD and RL in classifying Mnist Dataset



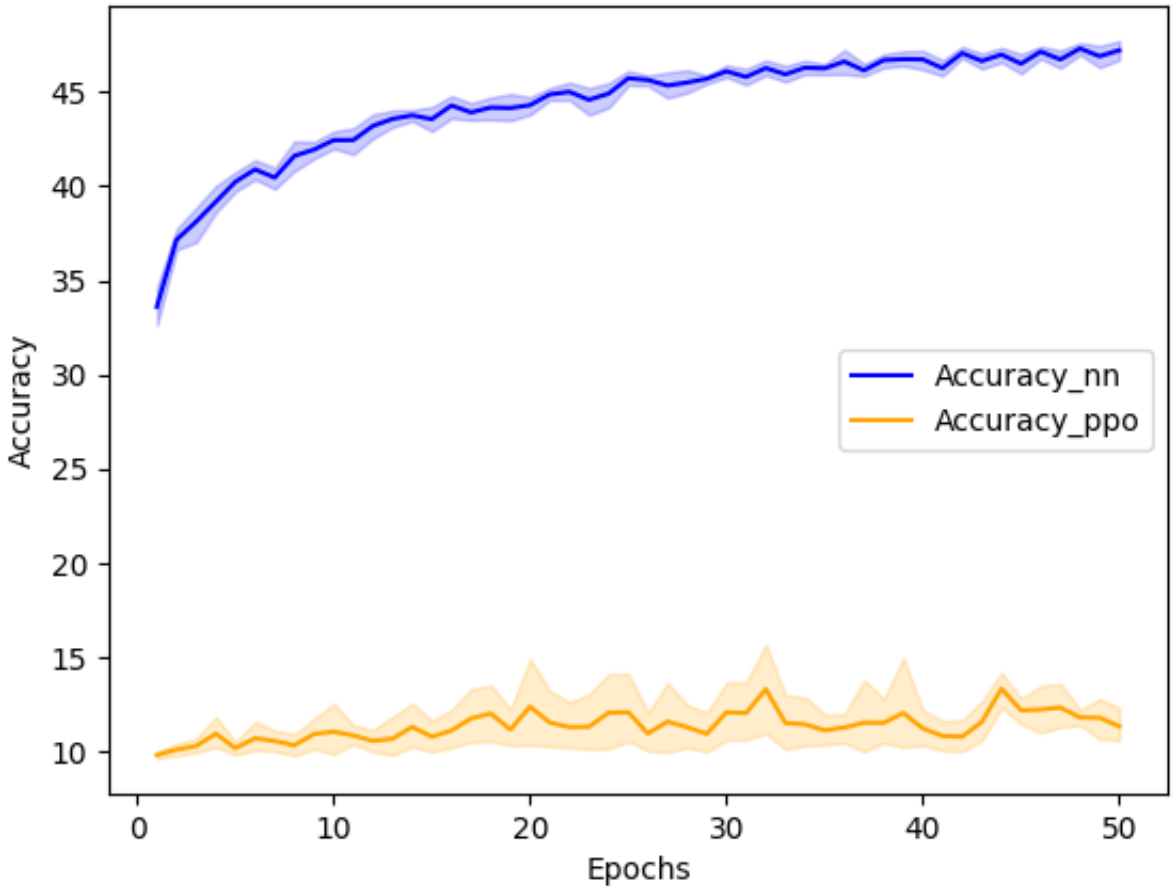
### 2.2 Boxplot - comparison between GD and RL in classifying Mnist Dataset



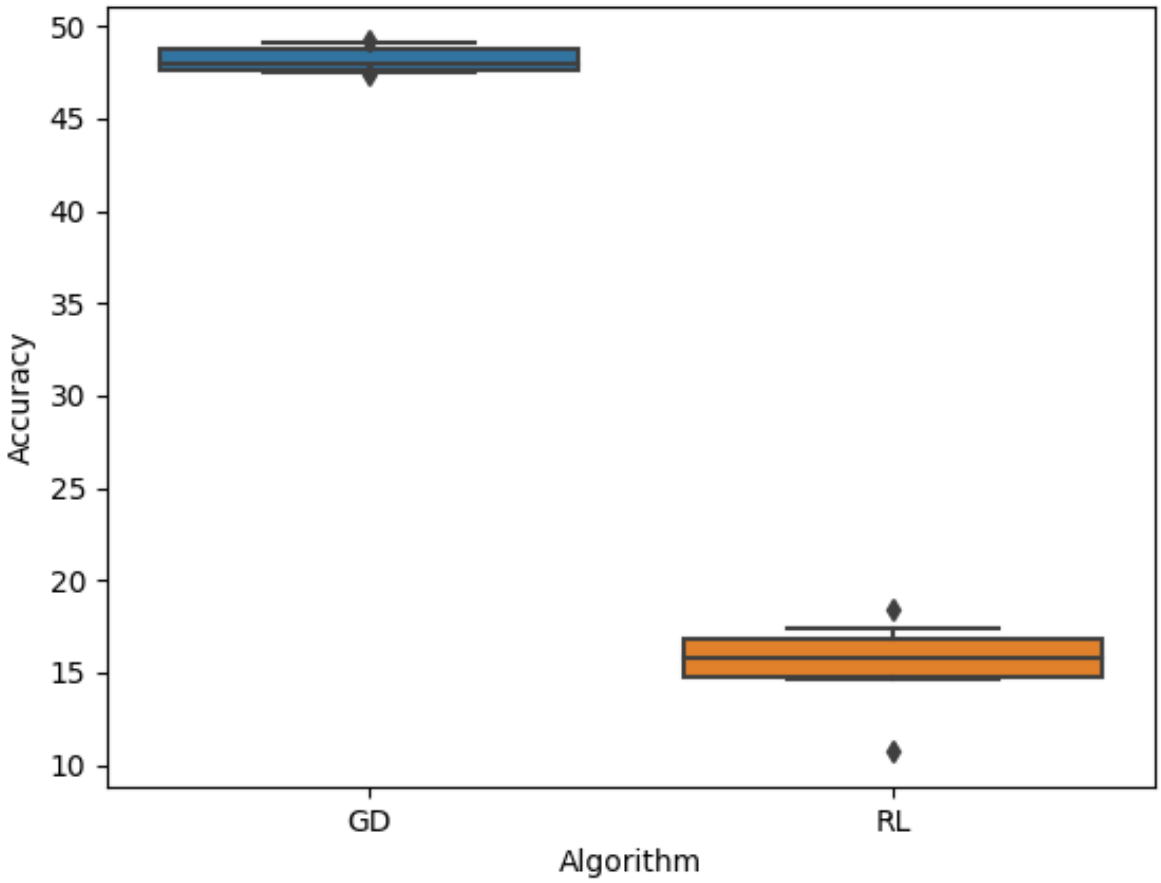
# 3 Cifar10 Dataset

## 50 epochs

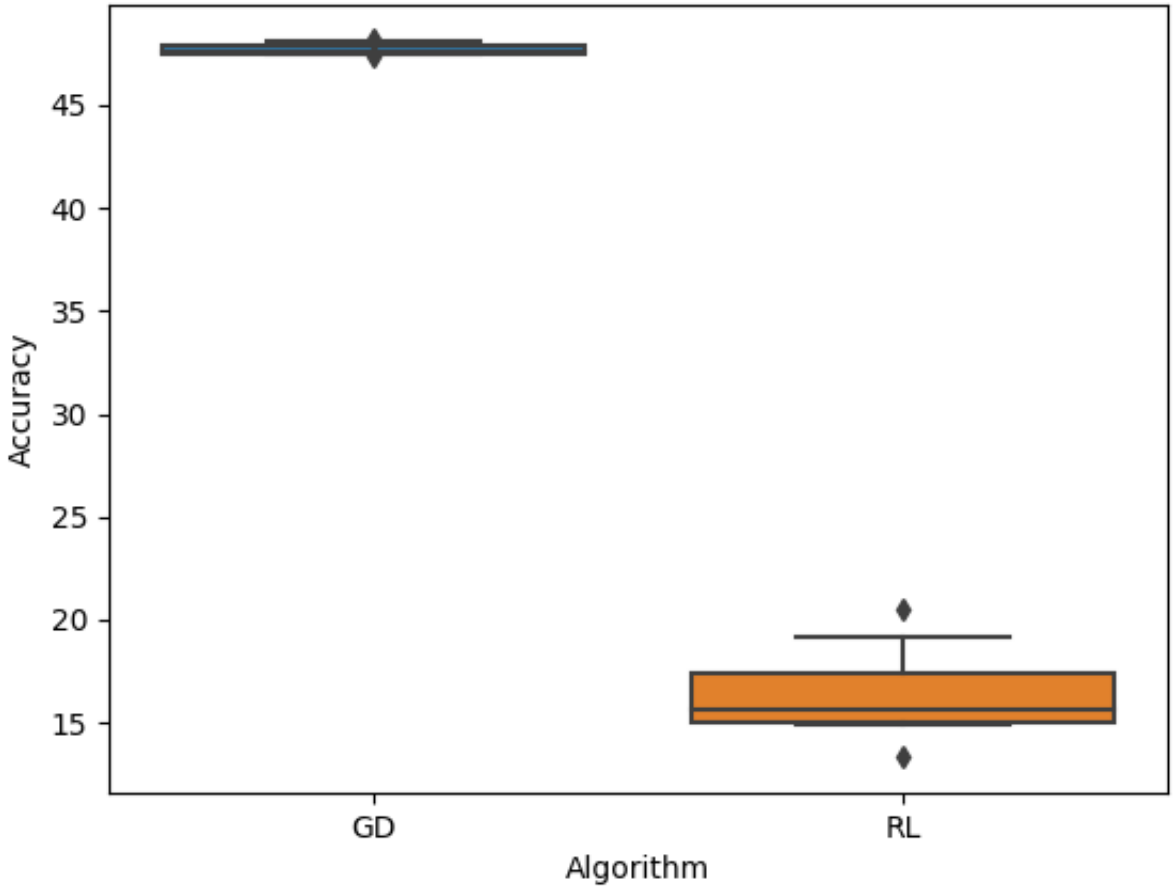
### 3.1 Lineplot - comparison between GD and RL in classifying Cifar10 Dataset



### 3.2 Boxplot - comparison between GD and RL in classifying Cifar10 Dataset

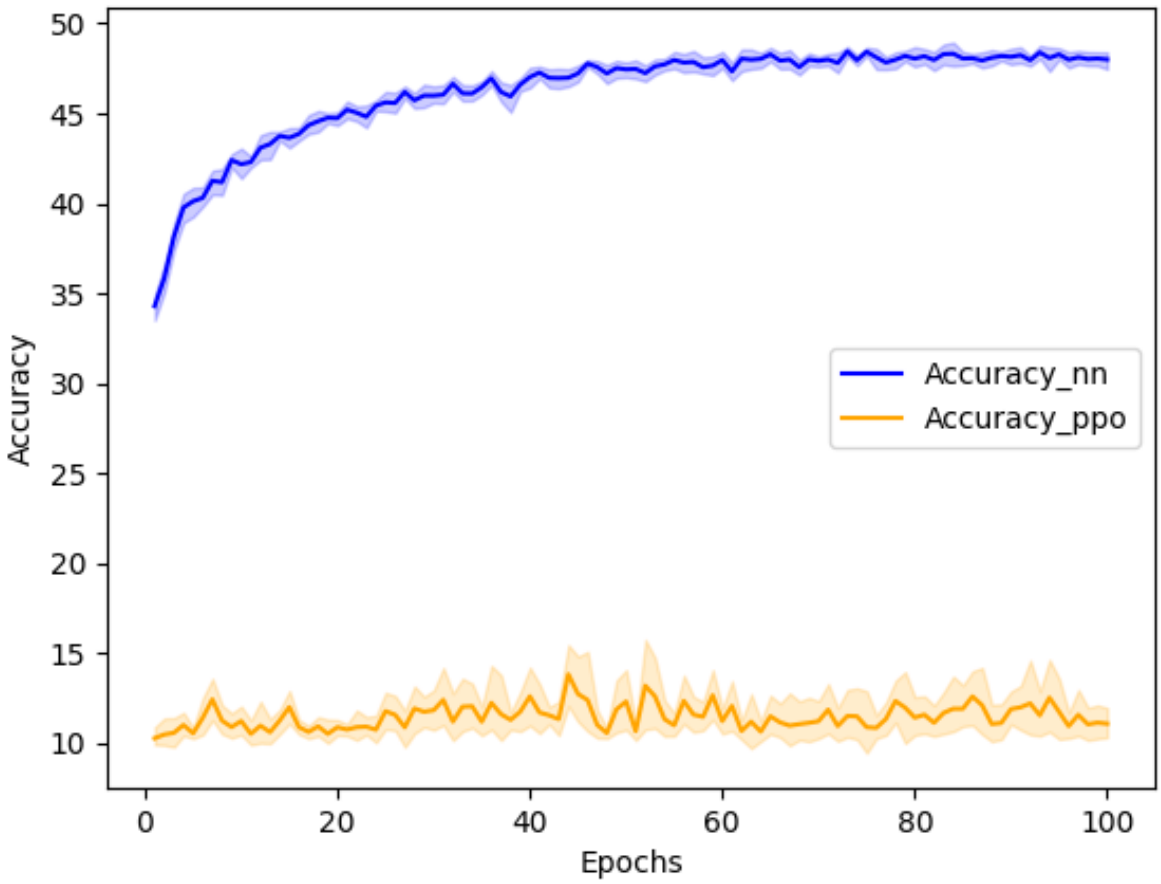


### 3.3 Boxplot - comparison between GD and RL in classifying Cifar10 Dataset

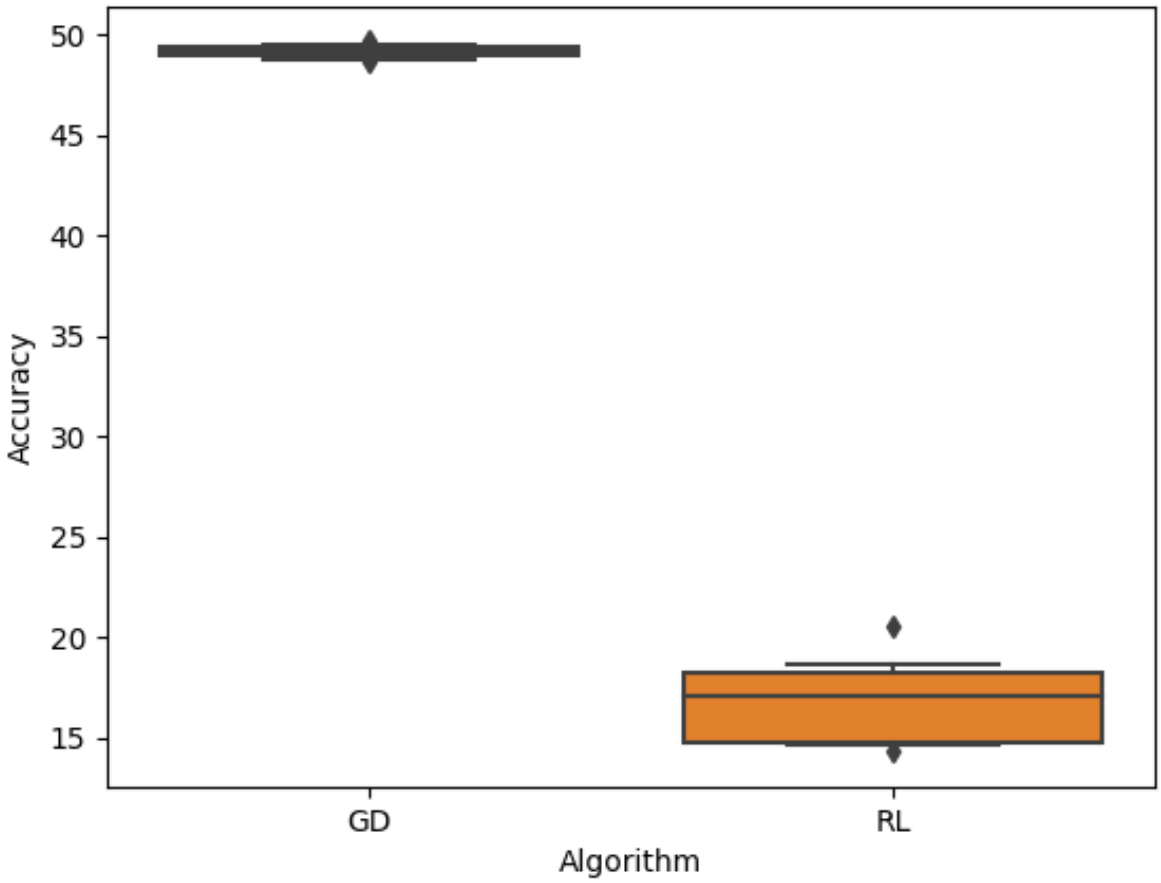


**100 epochs**

### 3.4 Lineplot - comparison between GD and RL in classifying Cifar10 Dataset



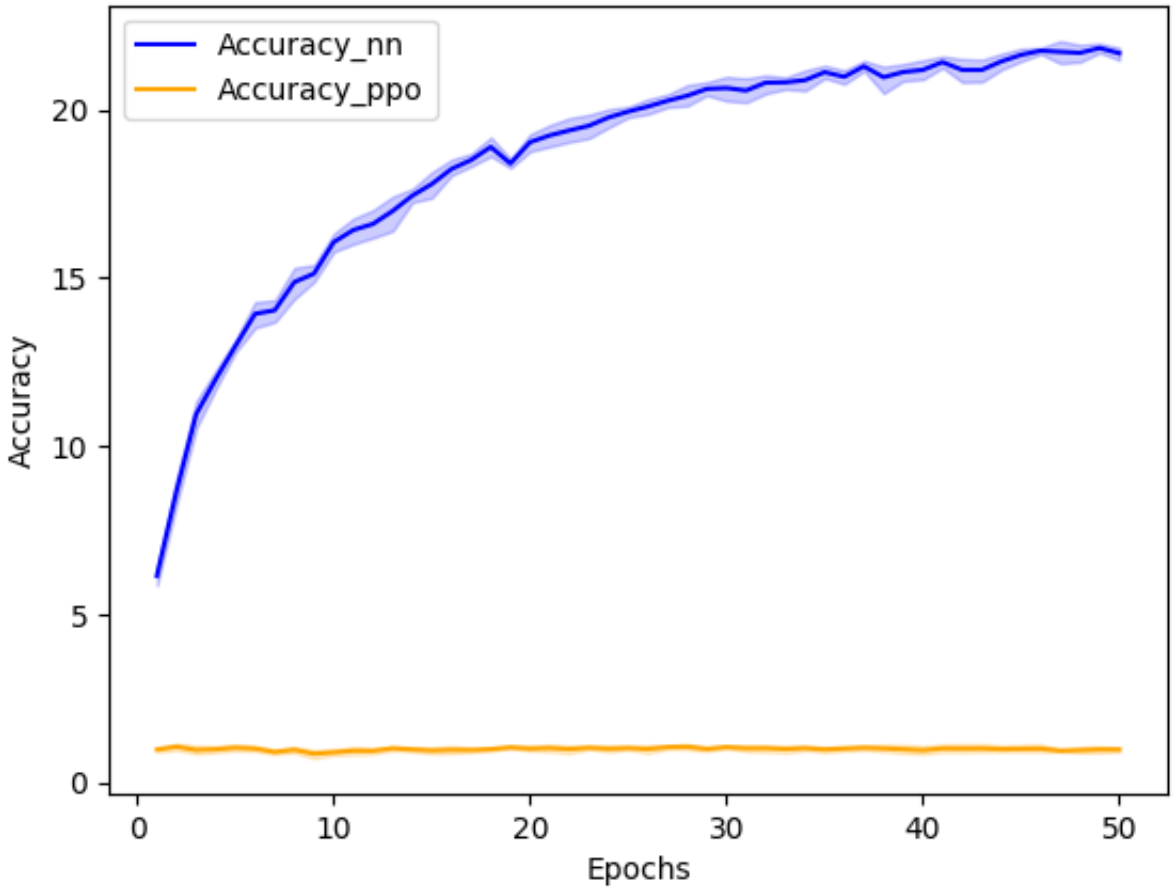
### 3.5 Boxplot - comparison between GD and RL in classifying Cifar10 Dataset



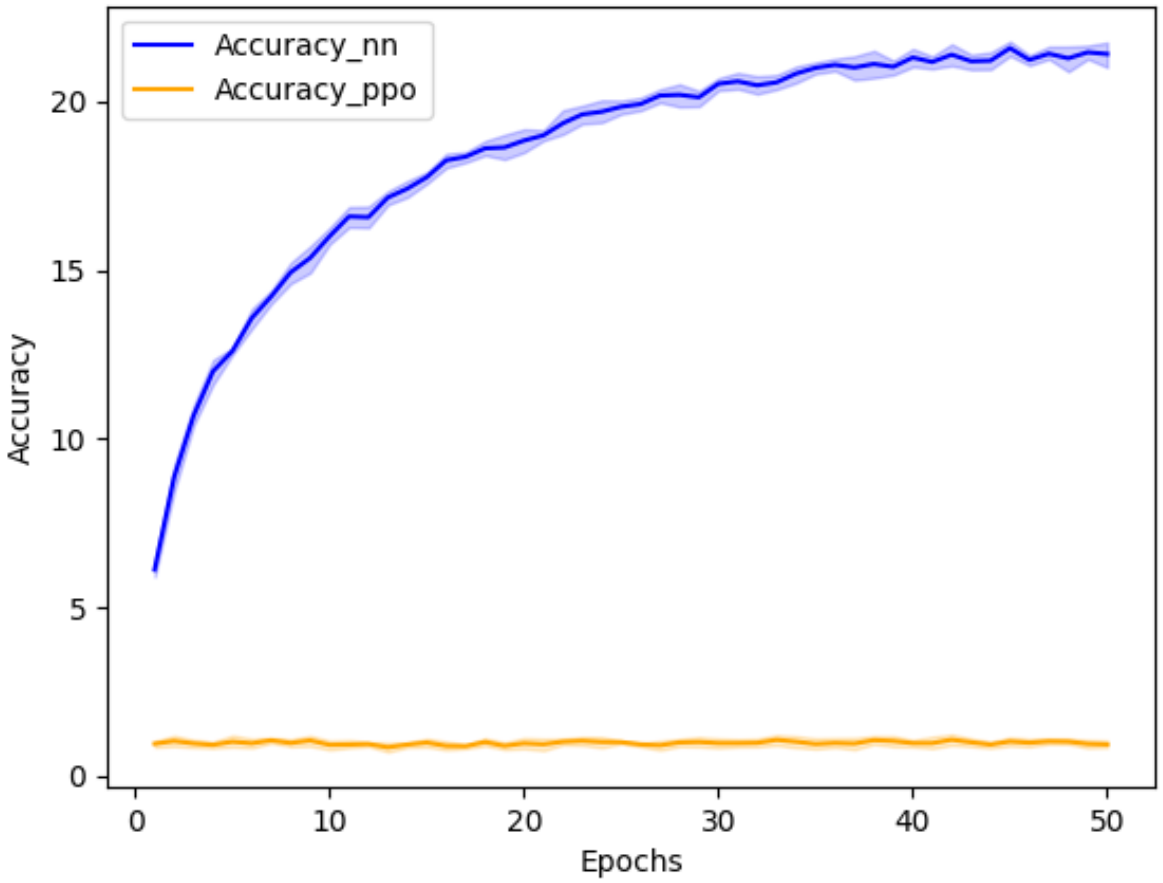
# 4 Cifar100 Dataset - 100 subclasses

## 50 epochs

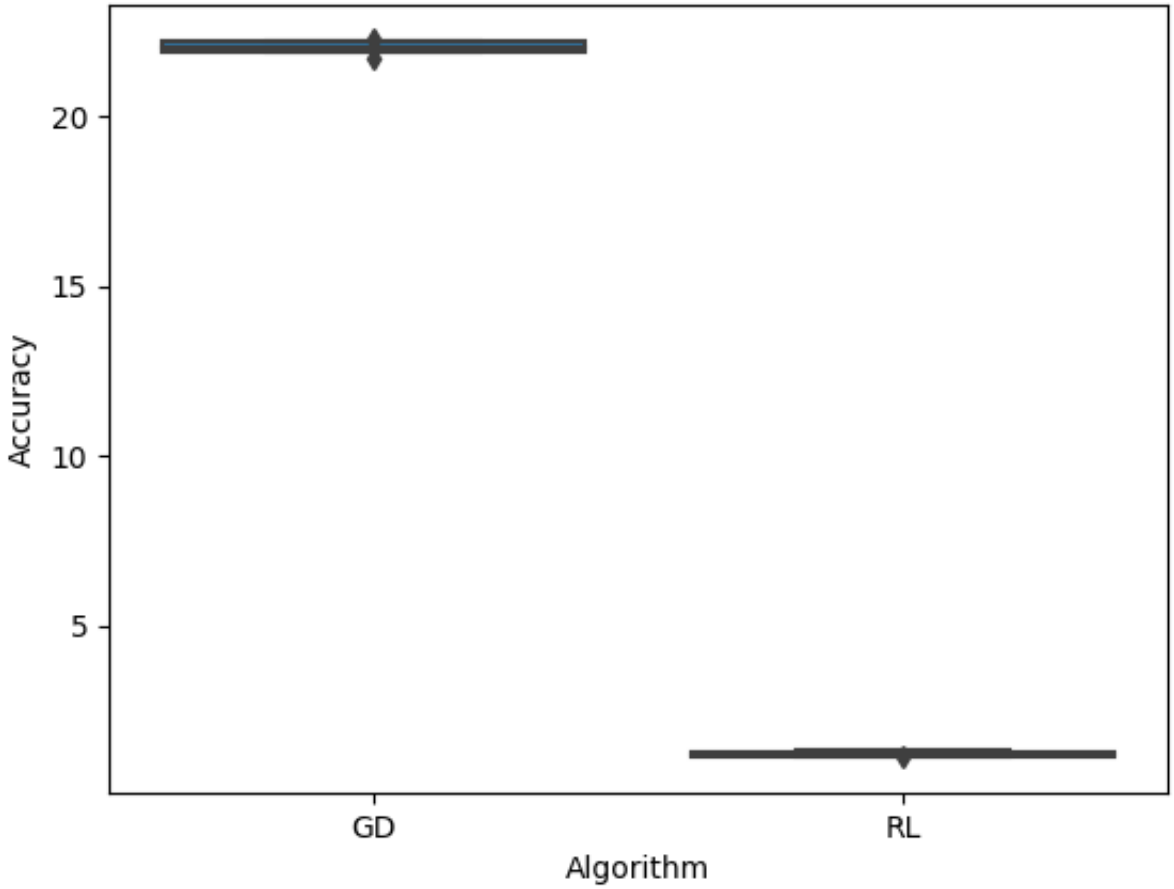
### 4.1 Lineplot - comparison between GD and RL in classifying Cifar100 Dataset



### 4.2 Lineplot - comparison between GD and RL in classifying Cifar100 Dataset

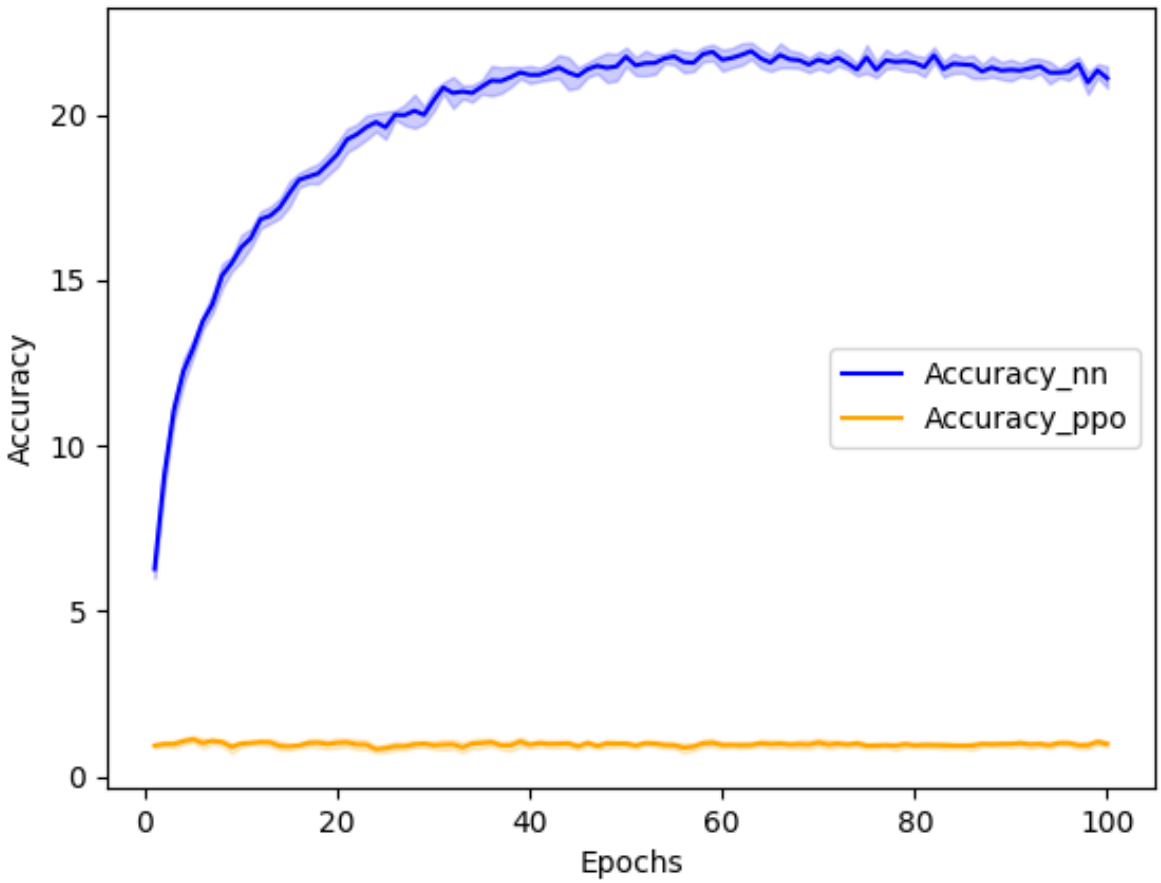


### 4.3 Boxplot - comparison between GD and RL in classifying Cifar100 Dataset

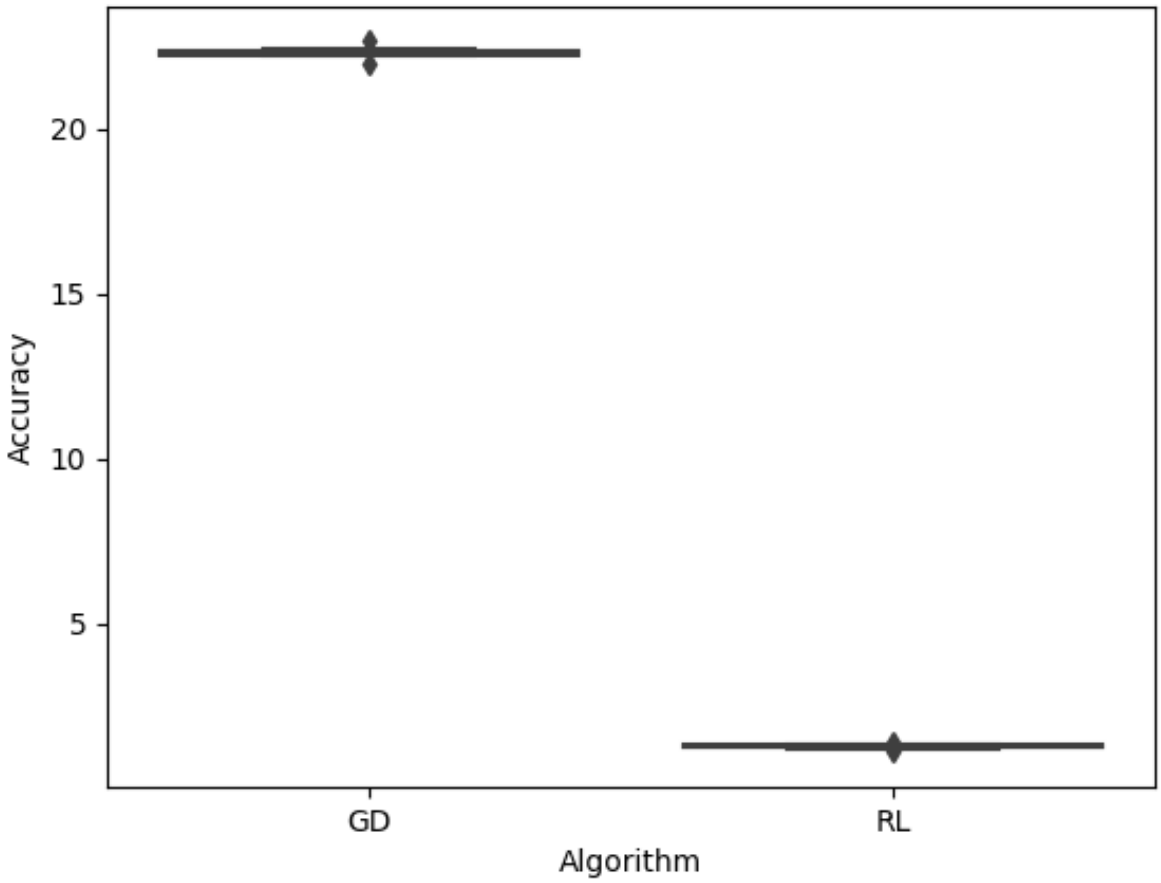


**100 epochs**

### 4.4 Lineplot - comparison between GD and RL in classifying Cifar100 Dataset



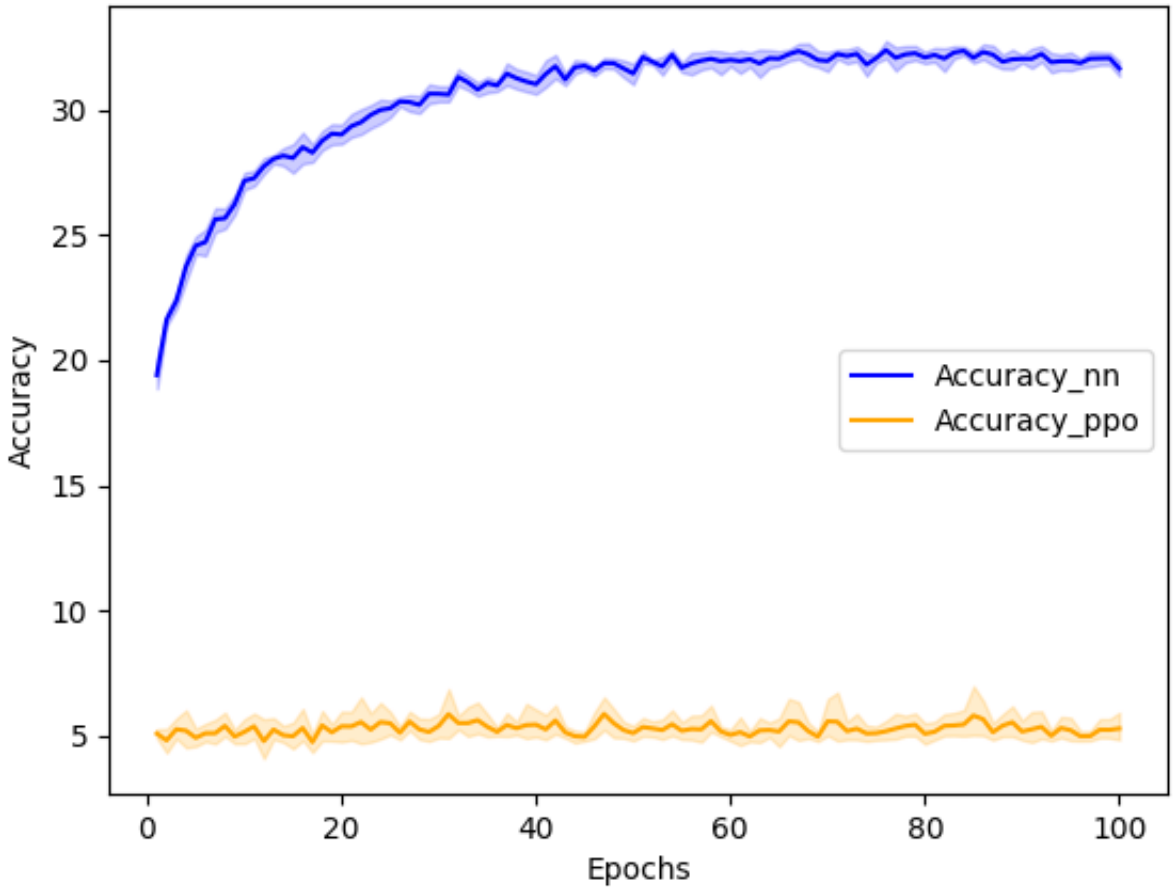
### 4.5 Boxplot - comparison between GD and RL in classifying Cifar100 Dataset



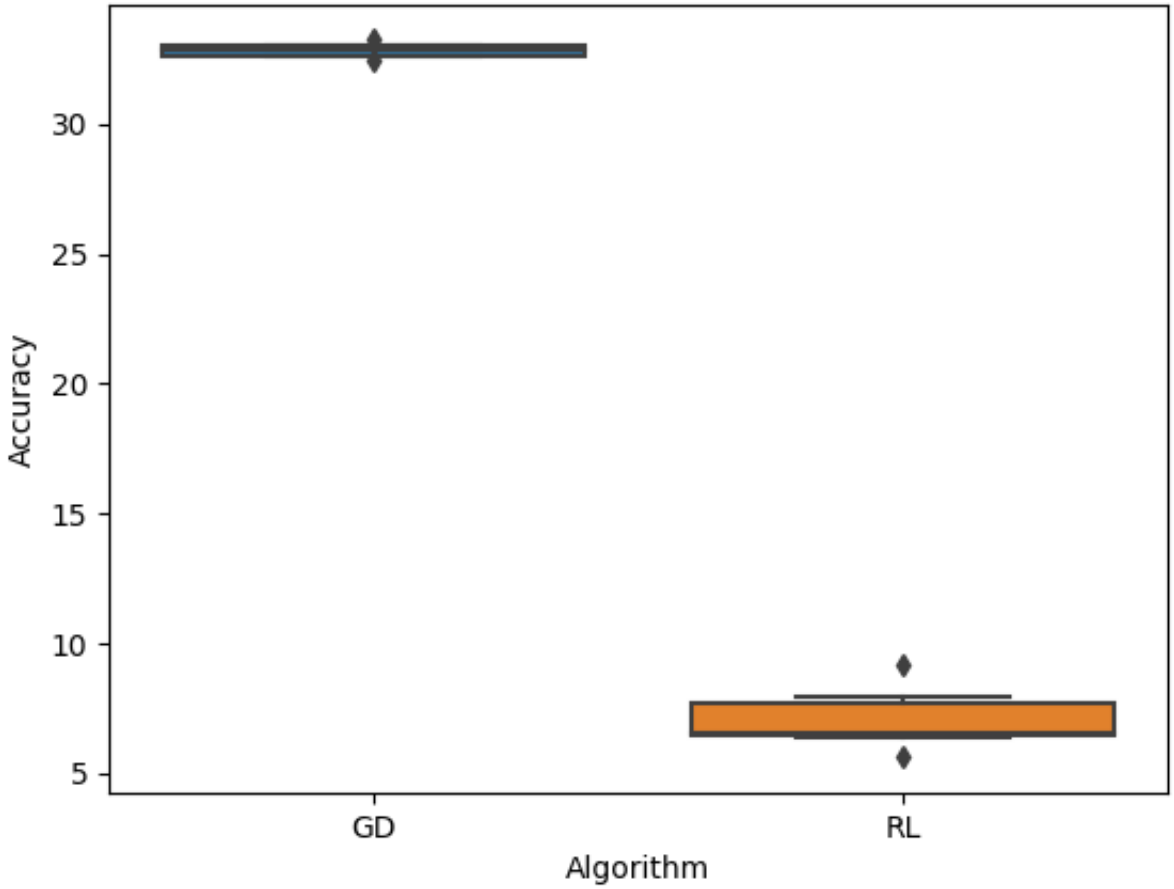
# 5 Cifar100 Dataset - 20 superclasses

**(7 repetitions)**

## 5.1 Lineplot - comparison between GD and RL in classifying Cifar100 Dataset

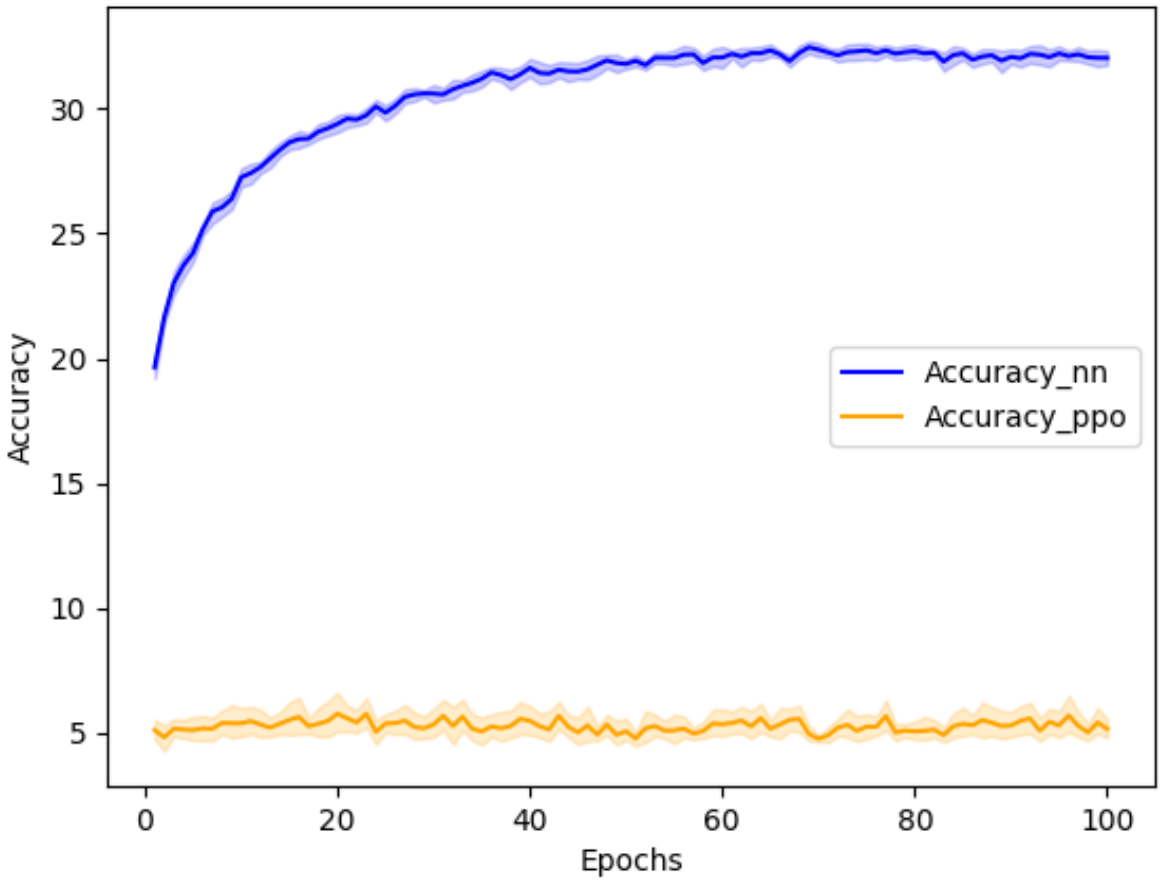


### 5.2 Boxplot - comparison between GD and RL in classifying Cifar100 Dataset



**(10 repetitions)**

### 5.3 Lineplot - comparison between GD and RL in classifying Cifar100 Dataset



### 5.4 Boxplot - comparison between GD and RL in classifying Cifar100 Dataset