

Project report

Project Title: Handwritten Digit Recognition using Artificial Neural Networks

Project Goal: To develop a model that can accurately recognize handwritten digits from the MNIST dataset.

Project Methodology:

The project was implemented using the following steps:

1. The MNIST dataset was preprocessed.
2. An artificial neural network was created using the TensorFlow, Keras, and Scikit-learn libraries.
3. The model was trained on the preprocessed MNIST dataset.
4. The model was evaluated on the test set of the MNIST dataset.

Project Results:

The model achieved an accuracy of 97% on the test set of the MNIST dataset. This means that the model correctly identified 97% of the handwritten digits in the test set.

Project Discussion:

The results of this project demonstrate that artificial neural networks can be used to achieve high accuracy in handwritten digit recognition. The model developed in this project can be used to a variety of applications, such as optical character recognition (OCR) and fraud detection.

Project Libraries:

The following libraries were used in this project:

- TensorFlow
- Keras
- Scikit-learn
- Matplotlib

Project Conclusion:

This project successfully developed a model that can accurately recognize handwritten digits from the MNIST dataset. The model achieved an accuracy of 97% on the test set, which demonstrates the effectiveness of artificial neural networks in this application.

Project Future Work:

The following are some ideas for future work on this project:

- The model could be trained on a larger dataset of handwritten digits.
- The model could be evaluated on a different dataset of handwritten digits.
- The model could be used to develop an OCR application.
- The model could be used to develop a fraud detection application.