

Assignment - 4

Title

Recurrent neural network (RNN). Use the Grangle stock prices and design a time series analysis and prediction system using RNN.

Objective

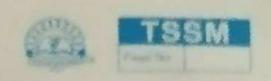
To implement different deep leasuring model.

Theory

RNN for a dataset having continuous data such as Google stock prices & how to electively measure the accuracy of the model using 122 value.

We use RNN for modeling sequence I services data where we have to analyze a services of data when predicting something. In other words, in services data a sequence of historical data points must be considered when making predictions a cannot just drive conclusion just by overlooking the data.

Therefore, unlike other models such as Multilayer persception & other simple ML models used for prediction, when using RNN, first should define the sequence of data to be considered when training one data point into the model.



GARLUSION

In this story we applied the concepts of Recurrent Neural Network (RNN) on the Google stock prices dataset.

FAQ's

I what's the difference between CNN and RNN and in which cases would use each one?

D Architecture .

CNN- Designed for processing gold-like data such as images. They use convolutional layers to extract spatial hierarchies of features efficiently.

RNN - Designed for sequential data such as text or time sexies. They use secursent connection to capture temporal dependencies.

2) Applications:

object detection and computer vision tasks where spatial relationships are crucial.

RNN - Suitable for tasks like natural language,
processing, speech recognition and time series
prediction where sequence of data and present
and context matters

3) Use =

CNN = Grid like data with spatial relationship.
RNN = Tasks involving sequential data with temporal.



- ANN layer have? what does each dimension represent?

 What about its output?

 The inputs of an RNN are typically have three dimensions. Each dimension represents batch size, sequence length, and feature dimensionally respectively.
 - dimensions. Each dimension represents batch size, sequence length, and feature dimensionally respectively outputs have three dimensions where units represent the hidden state dimensionality of the RNN cells.
- 3) What are the main difficulties when training RNNs?

 The main difficulties in taining RNNs include vanishing and exploding gradients, making it challenging to capture long-term dependencies. Additionally RNNs suffer from difficulties in retains memory over long sequences.
- What are the uses of RNN in NLP?

 RNNs are widely used in NLP for tasks like language modeling, sentiment analysis, machine translation & named entity recognition. There ability to model sequential data allows them to capture contextual information efficiently, making then suitable for tasks where understanding the context; so crucial for accurate predictions in text data

What's the difference between Traditional Feedforward Networks & Recurrent Newsal Networks?