Segmentation module for autonomous car

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Weekly Report for 26th Jan - 1st Feb

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Date: February 1, 2023

Overview

This is a weekly report of the Segmentation module for autonomous car. This contains the progress made by me on the project in the week of 26^{th} January - 1^{st} February, target for the next week and track of the time invested over the project.

Progress made this week

1) Learnt about neural networks

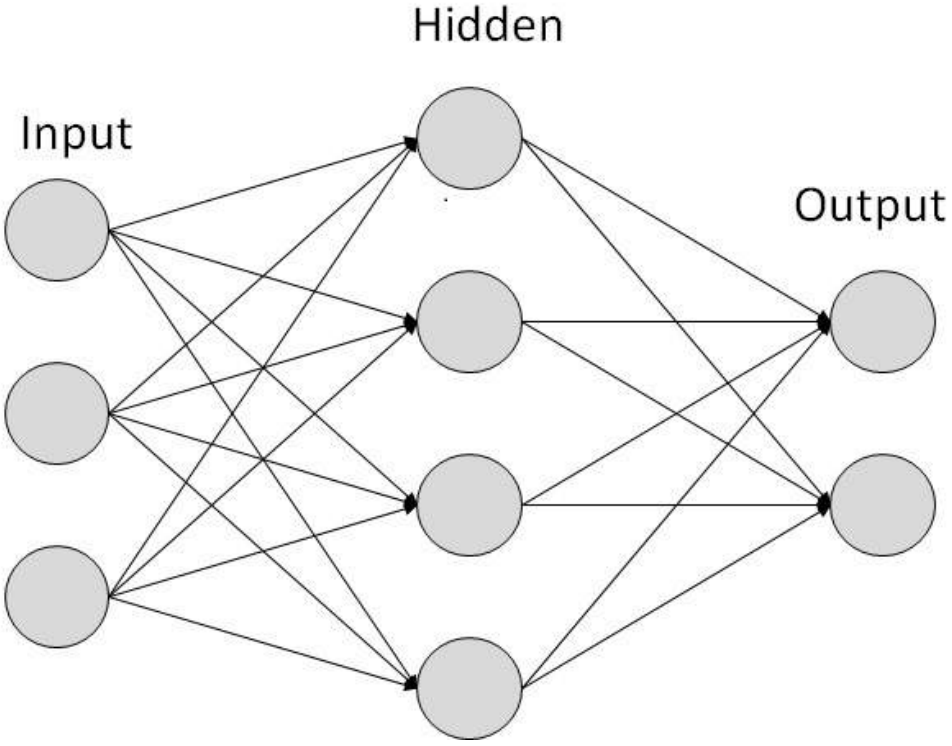

Figure 1: Sample of a neural network

Learnt about neural networks, their basic functions, and why they are used over other models. Understood about how the input layer is related to hidden and the output layer.

2) Implemented back propagation and forward propagation

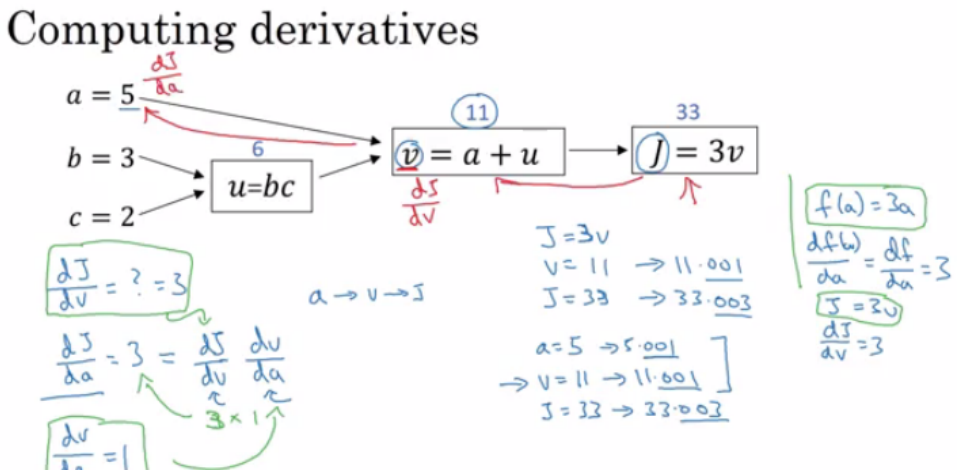

Figure 2: Back propagation example

Understood and implemented forward propagation, back propagation for gradient descent and for better prediction of the neural networks.

3) Vectorised the implementation

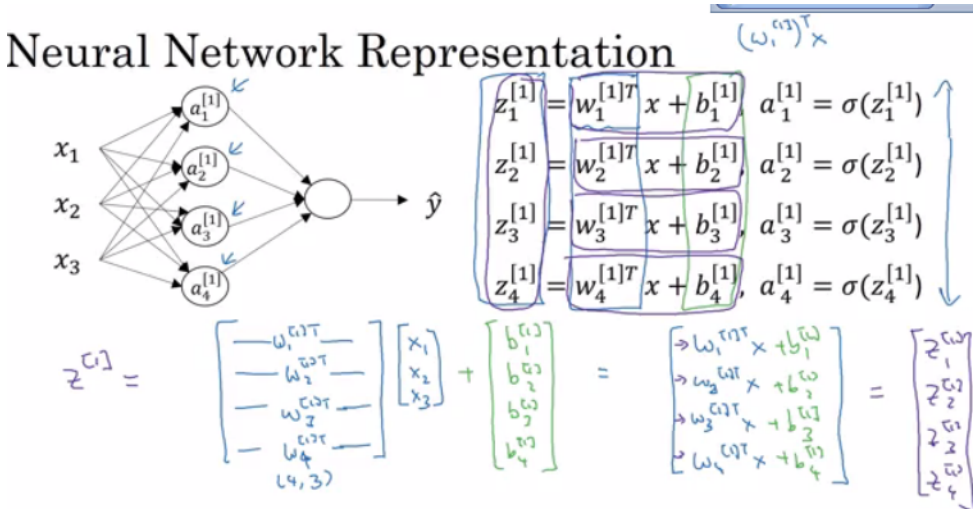

Figure 3: Vectorised implementation of a neural network

Vectroised the implementation of neural networks to remove some loops and for faster training of the model over data set. And implemented the derivatives using the vectors and arrays. Currently solving some example problems.

Time track of the week

1. Basic neural networks (4 hours)
2. Forward and backward propagation (4 hours)
3. Solving some example problems actual programming (2 hours)
4. Planning and report writing (1 hours)

Target for the next week

1) Learn about deep neural networks

Learn about what are deep neural networks? How are they formed? How could they be used? Implement them to some example problems.

2) Learn how to optimize neural networks

Understand about how to optimize neural networks. Tuning the parameters and depth in such a way that it suits the model and the data that we are working it. Developing some tests for tuning the parameters of the neural networks.

THE END

THANK YOU
