

Deep Learning Report 1

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1 Objective

The project is a simple task that is to be solved using two approaches to software development: the logic-based approach (Software 1.0) and the machine learning approach (Software 2.0). It is also designed to quickly gain familiarity with neural network basics, Python and machine learning frameworks.

2 Software 1.0

Simple python code that prints:
Fizz if number is divisible by 3
Buzz if number is divisible by 5
FizzBuzz if number is divisible by both 3 and 5

3 Software 2.0

3.1 Model

Input layer Size :10
Hidden Layer 1 has 250 neuron and Hidden Layer 2 has 100 neurons
Output Layer Size :4
Activation Functions : Relu in hidden layers

3.2 Optimizer and Loss function

Optimizer : stochastic gradient descent(SGD) with learning rate = 0.5
Loss function : Cross Entropy

4 Result

4.1 Software 1.0

Accuracy:100 %

4.2 Software 2.0

Test Accuracy:98 %

Test Accuracy for Fizz: 92 %

Test Accuracy for Buzz: 100 %

Test Accuracy for FizzBuzz: 100 %

Test Accuracy for others: 100 %