

Online Workshop on Creating Neural Network Applications in Deep Learning

The **CSI Student Branch of Maharaja Surajmal Institute** organized two days online workshop on “*Creating Neural Network Applications in Deep Learning*” on 19th – 20th October, 2020.

We know that technology is getting more and more advanced day by day especially in the field of robotics and Artificial Intelligence. Neural Networks play an important role in Natural Language Processing as well as Expert Systems; thus, it becomes an essential part of Artificial Intelligence. Thus, to learn what is Neural Network and how does it work, this online workshop was organized by the team on the online platform *Microsoft Teams*.

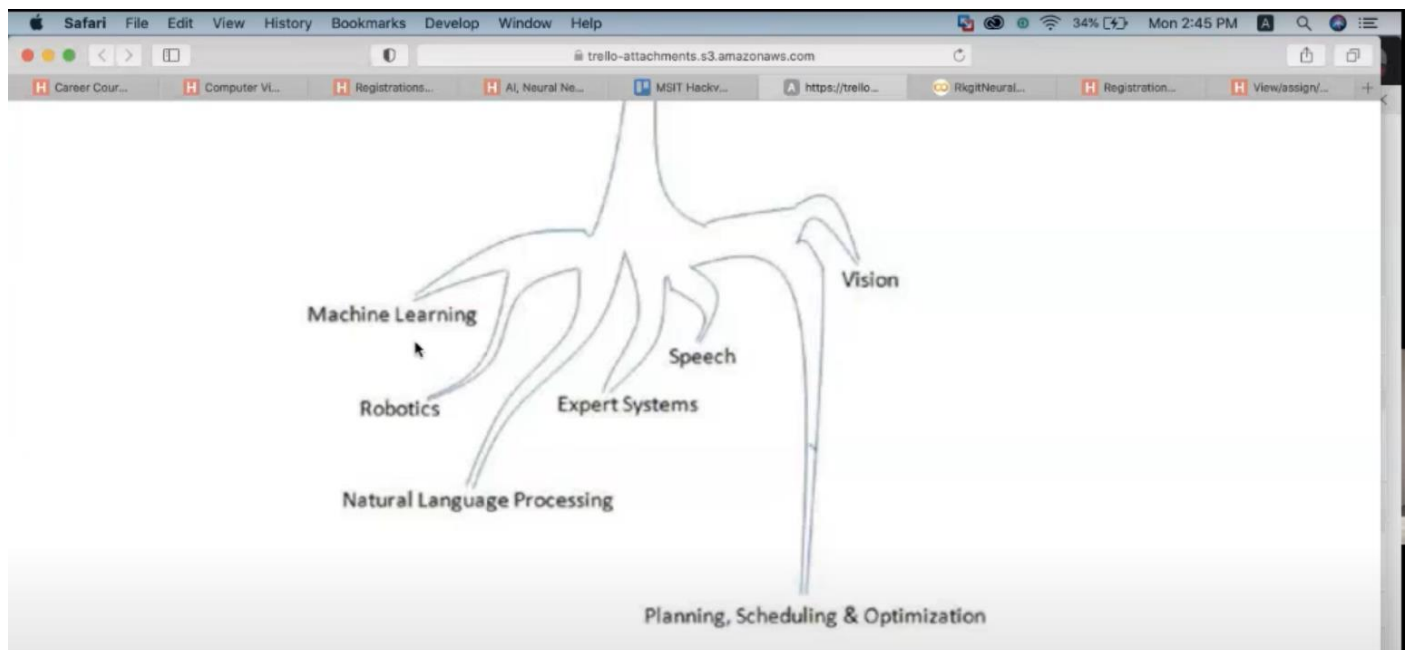
We had received over 100 registrations from students, faculties, research scholars, and others from different streams of different colleges of India.

On day 1, the workshop started with a welcome address by **Dr. Amit Choudhary**, Associate Professor, Maharaja Surajmal Institute. It was followed by an address by Chief Guest of the Event, **Mr. Arvind Sharma**, Regional Vice President, Region I, Computer Society of India.



After the address, the workshop session started with the keynote speaker, **Mr. Devanshu Shukla**, Director, Hackveda Ltd. The workshop started with the basics of

the technology so that the attendees who are new to it can also easily understand the workshop.



The workshop included various live coding examples and a demo of Neural Networks. The basics of Neural Networks were simplified for the attendees so that they can understand various libraries, packages that were being used to perform the various functions. It was explained that How Neural Networks are different from Data Analysis or Machine Learning? Various terminologies, algorithms, and real-life examples were used to explain so that it becomes useful and understandable for everyone. Various tools like Google Collab, Python were used to conduct the workshop.

```
12 return 1 / (1 + exp(-z)) # Sigmoid Activation Fn
13
14 def sigmoid_derivative(self, x):
15     return x * (1 - x) # output * (1 - output)
16
17 def train(self, x, y, epoch):
18     for i in range(epoch):
19         # Calculate the output of neuron
20         output = self.sigmoid(dot(x, self.weights)) # sig(z) = (1 / (1 + exp (-z)))
21         # Calculate the error
22         error = y - output
23         # Perform adjustment of the weights / Learning the weights
24         adjustment = dot(x.T, (error * self.sigmoid_derivative(output)))
25         # Use the adjusted weight as the new learned weight
26         self.weights += adjustment
27         #print("Adjusted wight on ", i, "iteration is ", self.weights)
28         print("Error at iteration", i, "is", error)
29
30 def predict(self, x):
31     return self.sigmoid(dot(x, self.weights))
32
33 if __name__ == "__main__":
34     rknn = RkqitNeuralNetwork()
35     X = X.to_numpy() # Convert dataframe into an array
36     Y = Y.to_numpy()
37     Y = Y.reshape(-1)
38     rknn.train(X, Y, 100) # Train the model, learn the best weights in 1 iteration
39     print(rknn)
```

On day 2, the session was continued by **Mr. Devanshu Shukla**. After the session was completed, the vote of thanks was delivered by **Ms. Kanika Kundu**, Assistant Professor, Maharaja Surajmal Institute.

Around 90+ people attended the live online workshop.

Some feedback from the attendees are:

“I always had a keen interest in data science and AI, and I am very satisfied with the workshop and happy with the content taught to us in the workshop.”

-Muskan Dhapa

“The session was very informative and helpful. I enjoyed the workshop and got to learn a lot. Hope to attend more in the future.”

-
Rhea Sidana

Organizing Members includes:

- Ankit Jee
- Debaangshu Sen
- Dhruv Rawat
- Harsh Bisht