



A
Report



On
Workshop of

**“PRACTICAL IMPLEMENTATION OF
DEEP LEARNING”**

With the Collaboration of Edunet Foundation

Date: 17th to 19th May 2023



Venue: Graduate School of Engineering and Technology,
Academic Block-5, GTU Chandkheda Campus, Near Visat three-roads,
Visat-Gandhinagar Highway, Chandkheda, Ahmedabad 382424, Gujarat.

The Workshop on **“PRACTICAL IMPLEMENTATION OF DEEP LEARNING”** was held at GTU - GSET, from 17th to 10th May 2023.

There have been 42 students from various colleges who had participated in this training. On 17th MAY. 2023, GTU-GSET inaugurated the Workshop on “Deep Learning”. Where 35+ final-year students across the state had joined this workshop. In this program, Prof. (Dr.) S. D. Panchal, Director GTU-GSET Prof. Soniya Jain, Assistant Professor GTU; Mr. Utkarsh Sharma, Master trainer- Edunet Foundation Were Present.



The welcome speech was given by Assistant Professor Soniya Jain where she talked about the importance of practical learning and discussed the new Deep learning. Moreover, Mr. Utkarsh Sharma, Master trainer- Edunet discussed the current trends of AI, ML, and Deep Learning and how this technical knowledge of such departments will help in creating a robust model for the students.



In this three-day workshop, students have learned about the major deep learning techniques from the beginning to the advanced level. Which are widely used and highly in demand nowadays like:

1. Computer Vision
2. Basic CNN & RNN
3. LSTM & GRU

An interactive session which was based on Theory & practical explanation of Deep Learning . Utkarsh Sir had formulated a clever and comprehensive working of Neural Networks & explained us the types network lf.

Day 1

Explained in depth the usage and the theory application of CNN , RNN in Ai , weights in neural network , gradient descent .

Then we performed the pima indians diabetes in the second half of the session .



Day 2

Convolution neural network in depth was explained with the appropriate usage of edge detection in neural network.

Then we performed all Convolution part in code written by Sir in jupyter notebook with the help of Anaconda using Cat & Dog dataset .

Day 3

A thorough study of RNN which helped in sequential arrangement of text & image was demonstrated to us. He further explained the Vanishing gradient usage in the system.

Then we performed the RNN on jupyter notebook with the help of Twitter sentiment analysis

An excellent session in which the complex Deep Learning concept was broken down into simple & doable parts .



Moreover, Mr Utkarsh Sharma had given a comprehensive working model of Convolution Layers & operations , Image processing , Flattening , Max Pooling , Filtration & Operation of Convolution Layers .

A variation of RNN that addresses the vanishing gradient problem and retains long-term dependencies. Employs memory cells and gates to manage information flow. Comprises a generator and discriminator networks that compete. The generator produces synthetic data, while the discriminator distinguishes between real and synthetic data. They iteratively improve each other. Learns through trial and error by interacting with an environment. An agent takes actions to maximize a cumulative reward signal based on the environment's state and feedback received. Specialized for image and video recognition. It uses convolutional layers to automatically learn and extract features from input data. Fully connected layers follow for classification. Information flows in one direction, from input to output. It consists of input, hidden, and output layers. Neurons are connected in a feedforward manner.

Photograph of the Sessions:

Glimpse of Event



Date-wise Sessions data:

Date	Faculty Name	Topic Discussed
17/05/2023	Mr Utkarsh Sharma	Computer Vision
18/05/2023	Mr Utkarsh Sharma	Convolutional Neural Network & Recurrent Neural Network.
19/05/2023	Mr Utkarsh Sharma	Long Short-Term Memory, while GRU stands for Gated Recurrent Unit

On 19th May 2023, we had Prof. (Dr.) S. D. Panchal, Director GTU-GSET, talking about how impactful deep learning is in the field of Computer Science & how it will shape our future. Deep learning is expected to have a significant impact on various domains in the future. Here are some areas where deep learning is likely to find increased usage:

1. Healthcare: Deep learning can assist in medical image analysis, diagnosis, and disease prediction. It can help identify patterns in medical images such as X-rays, MRIs, and CT scans, aiding in early detection and accurate diagnosis of diseases.

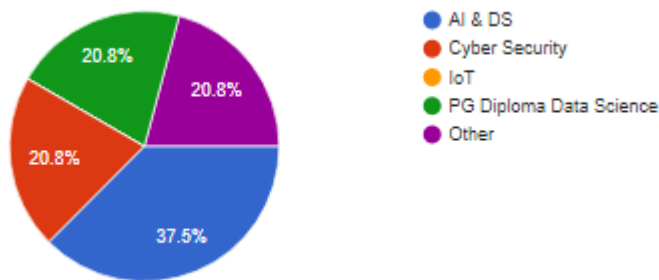
2. **Autonomous Vehicles:** Deep learning plays a crucial role in developing self-driving cars. It enables the vehicles to perceive and interpret the environment, detect objects, and make real-time decisions for navigation and collision avoidance.
3. **Natural Language Processing (NLP):** Deep learning models have already revolutionized NLP tasks such as language translation, sentiment analysis, chatbots, and speech recognition. In the future, we can expect even more advanced language understanding and generation capabilities.
4. **Finance:** Deep learning can be applied to financial data analysis, fraud detection, and high-frequency trading. It can help identify patterns in financial markets, predict market trends, and make informed investment decisions.
5. **Robotics:** Deep learning enables robots to perceive and interact with their surroundings. It can help robots understand object recognition, grasp manipulation, and improve their overall dexterity and autonomy.
6. **Personalized Medicine:** Deep learning can contribute to personalized medicine by analyzing large-scale genomic data, identifying disease biomarkers, and developing targeted therapies based on individual patient profiles.
7. **Internet of Things (IoT):** Deep learning algorithms can process and analyze massive amounts of data collected from IoT devices. This can lead to smarter and more efficient systems, predictive maintenance, and improved automation in various industries.



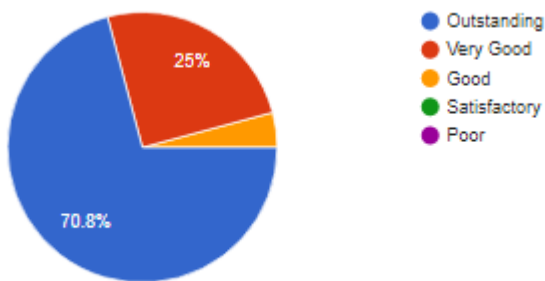
Workshop
On
“Practical Implementation of Deep Learning”
Feedback

Total No of Participants: 42

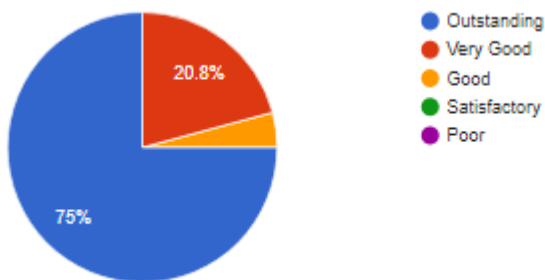
1) Which programme are you enrolled in?



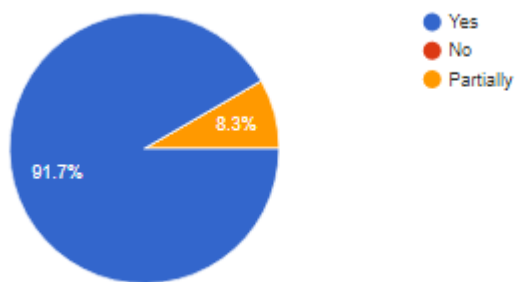
2) Content covered throughout the Session.



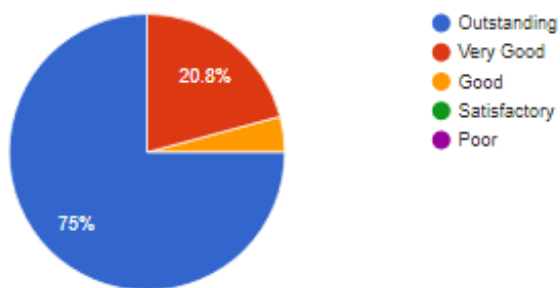
3) Overall quality of content delivered.



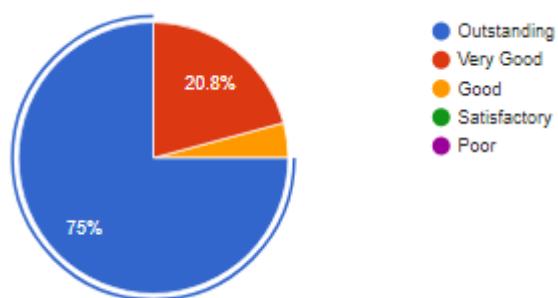
4) Is your expectation met from this Session as desired?



5) Overall Feedback for the Session.



6) Are you interested for such a session in future ?



Coordinator

Program Coordinator

Director, GSET

