**Note**:

 The assignment should be submitted on individual basis before the deadline

at nclab@neduet.edu.pk with your full name in the subject line

 Negative marking on cheating/copying

 You need to pass all the assignments to get the certificate

**ANSWER THE FOLLOWING QUESTIONS**:

1. How and where is facebook using Machine Learning to improve user

experience? (2.5 marks)

Answer:

Facebook uses Machine Learning for different tasks. Some of them are described below

**Face detection:**

When we upload a photo, Facebook uses artificial intelligence to detect faces. It says that its most advanced image recognition tool is more successful than humans in recognizing whether two different images are of the same person or not.

**Text Analysis:**

Facebook uses a tool it developed itself called deep text. Deep text ventures to understand how people use slang and determine the specific meaning of a word that may have multiple meanings by understanding the context.

**Fake news detection:**

Facebook announced lately that it’s working on an algorithm to automatically detect and remove fake news from the social media.

**Translation:**

Facebook uses AI to translate a text from one language to another. For example Spanish into English

2. How do you think deep learning can change the world and do wonders? (2.5 Marks)

Deep learning is a machine learning technique that teaches computers to do what comes naturally to humans.

**For example;**

Deep learning is a key technology behind driverless cars or enabling them to recognize a stop sign.

AI and machine learning will replace jobs that we know about today but because it brings new capabilities, it will open up new industries and new jobs that aren’t even on the modern person’s radar. Low value jobs currently in place will get automated away. It will allow us to spend more time on better decisions.

Generative design, simulation improvements, sensors, and big data design optimization. All of these areas are at the forefront of being significantly impacted by AI technologies. All of these advanced technologies have the ability to impact us as engineers and our profession as a whole in 3 main ways.

* Job Evaluation
* Capability Improvement
* Design and Data management

Lastly, machine learning greatly impacts how we manage designs and product creation. Our entire workflow from job definition to job application can be or is already being impacted by machine learning tools. To adapt, we must embrace the changes that are already here and predict the changes that will come. For machine learning specifically, we can start getting comfortable with altering our workflows alongside computers. By doing so, we place ourselves far ahead of our competition.

3. What is your dream AI project that can become into reality and can have a

commercial value. Justify your answer. (5 marks)

AI will definitely have a great impact on the future. The dream AI project that I think could be helpful is to have an AI Tutor. AI tutor will have a great impact on education. Education is the basic tool for any person to be successful. I believe that AI tutor would be really helpful for students. Since we know that AI already is successful in face detecting technology hence we can use this to detect emotions of students that who are struggling or bored and require better attention according to their individual need. The AI tutor could also use machine learning for Educational Data Analytics and Quality Monitoring. The tutoring platform could also record a student work and track the steps a student. The AI tutor could also have an attendance system built to eliminate the time and effort wasted in taking attendances in schools and colleges. It will greatly reduce the amount of paper resources needed in attendance data management as it would detect the face of the student present in the class. This system eliminates the use of paperwork needed for attendance marking and monitoring.

For commercial value as more students access smart virtual learning tools, machine learning has the potential to become increasingly useful. Quality monitoring is always critical when providing academic support and this will become more apparent as the market becomes increasingly competitive.