

# ASSIGNMENT

on

*Two page write-up on Emerging Technologies in  
Healthcare*

*Submitted by*

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**Roll No. 21111029 of 2021-25**

**1<sup>st</sup> Semester, B.Tech**

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## 1 Introduction

Emerging technology is a term generally used to describe a new technology. It can also refer to the development of a currently existing technology. The type of technologies referred here are the ones that are going to be in the medical industry in the span of 5 to 10 years and are expected bring a social impact all around the globe. The future of healthcare lies in coexistence of technology and healthcare workers helping out each other in the healthcare industry. The topic “EMERGING TECHNOLOGIES” is a very hot topic in today’s pandemic era where everyone are concerned about their health.

## 2 Important Aspects

Being at least two steps ahead of technology and then bringing in a sense of cooperation between humans and our technology can bring an amazing achievement. But along side with our dependence on tech and stuff, people should also work on changing the attitude towards healthcare and medicine. Here are a few assets of the trend of emerging technology:-

### 2.1 Artificial Intelligence(A.I)

Comparing to all the developments going around, the artificial intelligence has got the most potential of impacting the healthcare industry. It can mine out medical records, design treatment framework for the patient and create a new drug required for a specific purpose.

The Google’s DeepMind project created an A.I. for diagnosis of breast cancer. Scoring an average of 11.5 percent! On the basis of pre-recorded data, the algorithm of the system completely outperformed the other specialists and radiologists by a good distance. “BERG” a clinical firm working on biotech -based AI platform. It works in pointing out diseases and having a break-through by medicines. Recently they presented a cure to Parkinson’s disease in which their AI also helped in connecting the dots of chemicals present in human body for the disease. With all the above stated examples it’s quite interesting to know the utilization of AI in betterment of healthcare.

### 2.2 Genome Sequencing

DNA sequencing is the process of determining the sequence of nucleotides in our DNA. It inculcates specific algorithm and methods to find the respective sequence of bases viz adenine, guanine ,cytosine and thymine. The advent of rapid DNA sequencing research has led to the successive discoveries in our genome. It also helps in including the human genome and other complete DNA sequences of many animal, plant, and microbial species. California based startup ”HABIT” has offered personalized diets based on genetic code.

The Atlas biomed’s genetic test is a very insightful aspect in this domain. It analyses the genetic sequence and provided practical calls to action. The

results pertained by the test shows the nutrients and vitamins lacking in the human body. It also reveals any specific allergy or intolerance to certain items. In addition, it also revealed conditions to which the body is vulnerable as to provide a better protective plan.

## 2.3 3-D Printing

Three-dimensional (3D) printing is a modernized technique of manufacturing that creates a physical real world object from a digital design. In this technique very minute and thin layers of materials viz (plastic, cement, powdered stuff, metals etc) are laid down and then finally fused after completion of a specific level. 3D-printing is the new revolutionary domain of the medical industry. Critical things of the human body such as tissues, artificial organs and limbs, synthetic drugs requiring fine engg. and complex blood vessels.

In November 2019, researchers at the Rensselaer Polytechnic Institute in Troy, New York, developed a method to 3D-print living skin along with blood vessels. This development proves crucial for skin grafts for burn victims. This also proves very life comforting for war torn refugees and battle injured soldiers. NGOs like Refugee Open Ware and Not Impossible which use 3-d printing techniques for prosthetics manufacturing are also working in this area. The pharmaceutical industry is also gaining benefits from this new era technology. FDA approved some list of 3d printing drugs since 2015. Professionals are now working on a method of printing polypills along side combined with nanotechnology so as to help patients stick properly on their plans.

## 3 Mis-Conceptions

There are a hell lot of misconceptions in the public regarding the advancement of technology and it's application in the future. Professionals like doctors, nurses and physicians are having negative thoughts about the robots taking over their jobs. People are believing that A.I is going to control the entire health system in this decade. People suspect that AR -VR technology is going to make the youth running mad about a non-existing world. Even rumours like having a genetic test might lead to hacking of a person's genetic database are going round in the market.

All these are half facts and imaginary information which aroused due to the fear of an unknown place called the "FUTURE". But how much we try to avoid them the technological advancements are eminent and one way or other we are going to see different areas of life getting impacted by it. As for now what we can do is to be courageous enough to accept the future and the tech related developments with an open mind and collect knowledge enough to tackle this dynamic world .