

## READING PROCESS WORKSHEET

GED0001

NAME: John Gabriel T Pagtalunan

SECTION: 1-C

TEXT TITLE: Artificial Intelligence and COVID-19: Deep Learning Approaches for Diagnosis and Treatment

DATE: 03/27/22

TEXT TYPE: Technical Text

AUTHOR: Mohammad (Behdad) Jamshidi

### I. PRE-READING (10 POINTS)

A. Complete the table with the headings, subheadings, and visual titles/descriptions from the text. Provide at least 2 entries for each column.

Headings	Subheadings	Title/Description of Visuals
Abstract		<b>Conventional Visual:</b> The process of application of AI-based methods to conquer challenges associated with COVID-19
Index Terms		
Introduction		
Artificial intelligence and COVID-19		<b>Conventional Visual:</b> Application of AI-based methods in classification, analysis and improvement of the medical imaging approaches
The possible platform to accelerate conventional methods		

B. Fill the table with information that you already know about the topic (K), you wonder about the topic (W), and you will learn after reading the text (L). Fill the L Column after reading the text. Provide at least 2 entries for each column.

K	W	L
Based on reading the title for some context about the research paper. I know that deep learning is a big scene in the medical field. Using bioinformatics to further develop the capabilities and accuracy of the doctors and nurses.	I wonder how deep learning can be of further assistance to combat the COVID-19 than it usually does to help doctors and scientists discover new cures for other diseases.	After reading the first four pages, I learned the difference between the subsets of Artificial Intelligence, such as Machine Learning and Deep Learning, and how are functioning to help doctors and scientists with their duty. And possibly save more lives with accurate and fast results. The main difference is that deep learning requires little to no human intervention during its cycle.
Additionally, deep learning could lessen the required work and the stresses provided by the number of patients coming in and out of the hospital and taking samples and parsing them with the others. Deep learning can automate all of this all by itself.	Can deep learning provide a cure for the COVID-19? and if so, why is it taking so long? additionally, can it predict the future regards to the global pandemic right now, so that we can prepare for what is to come?	I have also found out, though it is no surprise, that there is a large number of samples every day to be gathered. In the scientific field, every patient is a

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		sample, meaning it is another piece of data to be considered. Hence, every day, there are an increasing amount of data that needs to be computed to get a better and more accurate result. Which artificial intelligence does stand out.
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### II. READING (30 POINTS)

- A. Fill the table with specific details from the text and inferences that can be drawn from it. Provide at least 2 entries for each column.

Details from the Text	Plausible Inferences
"However, another huge problem that researchers and decision-makers have to deal with is the ever-increasing volume of the data, known as big data, that challenges them in the process of fighting against the virus. This justifies how and to what extent Artificial Intelligence (AI) could be crucial in developing and upgrading health care systems on a global scale [6]."	From the sentences mentioned, I have concluded that artificial intelligence makes it easy for researchers, scientists, and doctors to handle large amounts of data pretty quickly. Especially if the issue we are currently experiencing is on the scale of a global outbreak.
"Hence, a critical situation like this necessitates mobilization and saving medical, logistic and human resources and AI can not only facilitate that but can save time in a period when even one hour of the time save could end in saving lives in all locations where Coronavirus is claiming lives."	The second or a minute that AI saves from computing data and producing information could mean life and a new hope for someone that is on the brink of death due to the severity of the illness that the person contracted because of the virus.

- B. Figure out the meaning of the technical term from the text. Write the technical term, indicate the clue from the text, and use the term in your own sentence. Provide at least 2 entries for each column.

Technical Term	Context Clue (i.e., antonym, synonym, examples, description, word parts, definition or any clues in the text)	Use each technical term in a sentence

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1. Bioinformatics	in which different aspects of information from a continuum of structured and unstructured data sources are put together to form the user-friendly platforms for physicians and researchers.	With the use of Bioinformatics discipline, we can create a software that is accurate with its results.
2. Machine Learning	"Collecting, analyzing and leveraging the data such as consumer, patient, physical, and clinical data ends in big data."	In college, I wanted to take the Machine learning course specialization for Computer Science field.
3. Deep Learning	"DL consists of numerous layers of algorithms that provide a different interpretation of the data it feeds on."	When we were studying machine learning, we were asked by our professor to first understand one of the subset of machine learning, which was deep learning.
4. Artificial Neural Networks	"Artificial Neural Network-based tool for challenges associated with COVID-19."	During the today's class of machine learning, we tackled how to use artificial neural network to simulate the decision making of a computer with hundreds of iterations.
5. Magnetic Resonance Imaging	"several imaging techniques may be suggested according to the previously obtained results."	John had an accident when he was 12 years old. The doctors suggested that he has to get an MRI result or magnetic resonance imaging so that they can furtherly help him.

**C. Supply the missing information below:**

**1. Topic of the text:**

The topic of the text is about using the Deep learning technique to diagnose and possibly cure patients with COVID-19.

**2. Writer's opinion about the text's topic:**

The writer strongly suggests artificial intelligence, specifically, deep learning can help medical doctors and scientists with regards to diagnosing, and providing the cure for the novel coronavirus disease 19. Artificial intelligence is currently not fully utilized in the medical field, especially while combatting the COVID-19, which the author aims to change.

**3. Support for writer's opinion (e.g., evidence such as facts, testimonies, examples, etc.):**

- a. The author stated that through the use of deep learning, medical engineers and doctors will be able to detect and diagnose covid-19 using radiology modalities. In a recent study conducted by Mustafa Ghaderzadeh and Farkhondeh Asadi

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titled *Deep Learning in the Detection and Diagnosis of COVID-19 Using Radiology Modalities: A systematic Review*, it tackles how deep learning is used for early detection and diagnosis of the disease.

- b. The author suggests that machine learning is also an important aspect that should be utilized in the battle with covid-19. He suggests that machine learning can help medical experts decide the solutions for the big chunk of data that the system collects from hundreds of samples daily. In the special issue *Industrial Innovation in the Intervention and Prevention of COVID-19* by Li Da Xu. It answers most of the key issues with the use of machine learning for creating solutions and preparing for the future evolution of the disease.
- c. "Deep learning is the current trend in dealing with medical images. It is intended to assist radiologists in giving a more precise diagnosis by giving a quantitative analysis of worrisome lesions and allowing for a faster clinical workflow" - (Role of deep learning in early detection of COVID-19: Scoping review, 2021)

### III. POST-READING (10 POINTS)

A. Answer the following rhetorical analysis guide questions.

1. What credentials does the author have which give him/her the authority to write about the topic of the text?

Mohammad (Behdad) Jamshidi is a well-known researcher. He is currently a researcher in the Regional Innovation Centre for Electrical Engineering at the University of West Bohemia. He has published a lot of research papers and his work has been cited hundreds of times by other researchers. He is a member of the Institute of Electrical and Electronics Engineers, a professional institution. He was also a senior researcher in International Astronomical Union from 2011 to 2019. His work and dedication have been recognized globally, leading to collaboration from well-known international universities such as Waseda University in Tokyo and Edinburgh Napier University. He also won lots of prestigious awards for his work. He is well known for his publication on complex systems, big data, computational intelligence, artificial intelligence, machine learning, and deep learning. This proves that he is one of the best candidates to produce such a research paper.

2. After considering the author's profession and affiliation, what possible biases the author might have about the topic?

After intensive consideration regarding his background, the author might be too keen on the full implementation of artificial intelligence in the medical field. His research talks about all the advantages that we could have from this but not the disadvantages. It is contradicting another technical text I have read, *Are We Too Dependent on Technology?* by Terry Brown. which talks about

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how people are becoming too reliant on technology for everything, and sooner or later, we might lose our touch.

3. What is the purpose of the text, and how does the author accomplish that purpose? What evidence does the author use to support the main idea in the text?

The author convinces the audience to utilize artificial intelligence more in the medical field, especially when combatting the pandemic. The author used models, graphs, and figures to demonstrate how artificial intelligence subsets such as deep learning and machine learning can compute, diagnose, and predict information and data much quicker and more accurately.

4. What specific idea/information in the text challenges or surprises you? Why?

The figures that the author used to demonstrate his points somehow challenge my understanding of the topic. But giving it time to digest and absorb all the information little by little. I have understood the author's supporting figures for his arguments. Additionally, mid-reading the text, I am constantly using glossaries to further understand some medical terms that are unfamiliar to me which causes the delay in reading the text.

5. Is the style of writing suitable for the intended audience? Is it too formal or too casual? Why?

The author's style of writing is not for everyone, indeed. Using several technical terms mid sentences is a hassle for someone just curious. However, the author intends this research paper for someone who is an expert in the field. Such as medical policymakers, scientists, and medical doctors. So, based on my understanding, the author's style of writing is just right for and formal for addressing major issues in the battle amidst covid-19.