Major Paper 2 - Computer Science

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Major Paper 2

Inquiry: In the past century, has Computer Science revolutionized the world?

With the recent boom in Computer Science, many remarkable, as well as innovative, inventions and algorithms are produced daily. From self-driving cars to Amazon's Echo, we continue to interact with this field on a daily basis. As we enjoy these luxuries — that we often take for granted — we forget where it all originated. In 1936, Konrad Zuse blessed humanity with the first programmable computer. Quickly there, computers advanced and so did Computer Science. From the first programming language, it opened up doors to more efficient, effective, and robust languages, that are used today — from Python to C++ and Java, they dominate today's world. From mere letters, the industry has contributed to the advancement of other fields**. I do believe that Computer Science has made its mark on the universe, by propelling human boundaries and providing an innovative solution towards the never-ending problems.** From using machine learning to diagnose diseases to creating the software in that phone in your pocket, Computer Science has drastically transformed the world in a way where we cannot turn back.

One field where Computer Science made an everlasting effect on was the medical field. Before, the process of discovering potential cures required a human to manually test various combinations. Now, neural networks are able to mix and match functional groups and active sites quicker as well as autonomously. It has also made detecting potential diseases more accurate, efficient, and effective through disease

detecting algorithms. From simply entering a database full of various pictures of the disease, the algorithm trains itself to understand specific patterns and symptoms, allowing for a consistent and accurate diagnostic, "Facial recognition software is being combined with machine learning to help clinicians diagnose rare diseases. Patient photos are analyzed using facial analysis and deep learning to detect phenotypes that correlate with rare genetic diseases" (Emerj). Computer Science has allowed for incredible discoveries — from the valuable cures to assistant machines in the surgery room — and has continued to rapidly grow. It has incorporated efficient, effective, and innovative solutions and has forever left an imprint in the medical field. By utilizing programming, advancement in robots have made its way into the surgery room, such as Duke Universities' T.R.I.N.A (Tele-Robotic Intelligent Nursing Assistant) — an assistant that's able to safely contact contaminated materials and minimizing human exposure to contagions and other biohazards. The technology continues to advance, making the lives of humans safer and healthier. It has made an everlasting effect in the industry by propelling human boundaries. A century ago, the thought of living past eighty was unfathomable, however, thanks to Computer Science, it has allowed us to achieve unthinkable achievements.

In the 21st century, Computer Science has stormed the gaming industry, furthering it to greater heights. Specifically, it has contributed to Virtual Reality — an experience where an individual is immersed in an environment whether it may be realistic or fantastical. The field is fairly new, allowing room for further advancement in terms of technology and in affordability. From a simple Virtual Reality machine, it has

been able to let people explore foreign environments and battle through phobias, "The benefits of VR are still being calculated because certain proposed ideas, such as therapists using VR to help patients overcome phobias, have not yet been tested. As illustrated below, VR technology provides intuitive ways for users to explore new environments and master new skills" (ComputerScienceDegreeHub). Computer Science was able to combine the various sensors, screens, and audio in order to immerse the individual into an environment. By doing so, the person is able to perform intense simulations almost first hand — such as surgeries or chemical labs — and without being in any potential danger. Small inventions like these are able to drastically impact the way we interact with the world by allowing us to endlessly explore various dimensions in the safety of our home.

Specifically, in the field of study, Artificial Intelligence has even seeped its way into the car industry through self-driving cars. The automotive AI market is expecting the value of AI in automotive to be at $11 billion in 2025, and the IHS Markit also predicts the installment rate of AI-based systems to rise up to 109%. Cars are now implementing the necessary technology for Artificial intelligence, "Autonomous vehicles are being fitted with cameras, sensors and communication systems to enable the vehicle to generate massive amounts of data which, when applied with AI, enables the vehicle to see, hear, think and make decisions just like human drivers do" (Medium). Through the technology, it allows the car to be alert like a human, however, its awareness does not seize to fail out of fatigue. With the incorporation of AI in cars, it creates a system where traffic and human-driving are eliminated, increasing efficiency as well as lowering

human-accidents. Entrusting everything to a robot that'll reroute you through the most efficient route is unorthodox but incredible. By doing so, you trust your life in the hands of the programmer that designed, created, and tested the AI system. This is just another step in proving our undying reliance on the technology surrounding us — technology that programmers develop algorithms for.

However, Computer Science has even caused unforeseen conflicts, due to the obscurity of it. It has questioned human morals, potential devastating tools, and unforeseen events. From questions asking 'Who'll be responsible if self-driving cars crash?' and 'How can Artificial Intelligence be dangerous?', it makes you wonder possible answers to the complex question. As we continue pondering for a fair answer, a potential one was listed in the Seattle Times, "Currently, if two cars collide, either the drivers work it out, or police or insurers talk to the drivers and examine the evidence to make a determination of who's at fault" (Seattle Times). The idea would be perfect in an ideal scenario, however, there will always be circumstances where it continues being complicated — like the lack of evidence. The answer remains unclear, nevertheless, Computer Science has made us rethink certain policies that may soon be outdated. It has incorporated another contributing factor amongst accidental events but has theoretically improved the car industry. As for questions surrounding the magnitude of danger Artificial Intelligence brings, it has made many question the ethics of the field. There are certain scenarios that researchers believe make Artificial Intelligence dangerous, "The AI is programmed to do something devastating… The AI is programmed to do something beneficial, but it develops a destructive method for

achieving its goal" (FutureOfLife). There are numerous of scenarios that come into mind when reading these conditions — like someone creating a robot aimed at destroying humans and an AI car preventing a car crash but instead runs over a human — all of which aren't urgently addressed. These are only some of the questions that remind us of the endless potential Computer Science holds, both in the good and bad spectrum. It furthers our way of thinking of certain policies that incorporate innovative and advanced technology.

Computer Science has only been around the past century, and it has seeped into all fields of studies. Being in the 21st century, the area has much room to advance in terms of technology and theoretically — all of which provide an efficient, effective and innovative method in various industries. In twenty-four hours, the amount of time the average citizen interacts with the field is extraordinary — from interacting with your phone to any software application you open. Without the technology that many have become reliant on today, many human boundaries would remain as well as ineffective systems. As humans, we have become so accustomed to the software that programmers create, which is why it's impossible to turn back. From a simple computer, it has allowed for Computer Science to exponentially grow and leave its mark with the use of texts. As we continue living our daily lives, we unconsciously interact with programming, whether that may be from performing a quick Google search to unlocking your phone via face detection or fingerprint. As we continue to rely on the advance technological contraptions, we subconsciously trust Computer Scientist with our lives — from handling personal data to using self-driving cars. Today, all of us lean on a field

that has recently occurred in the past century, something that can't be said for other ancient studies

Citations

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ORIGINALITY REPORT

19%	17%	2%	15%
SIMILARITY INDEX	INTERNET SOURCES	PUBLICATIONS	STUDENT PAPERS

PRIMARY SOURCES

1	www.computersciencedegreehub.com Internet Source	3%
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GRADEMARK REPORT

FINAL GRADE

51 /0

GENERAL COMMENTS

Instructor

Because of time constraints, I am primarily focusing on strength and support of claim, rabbit hole avoidance, depth of inquiry, and intertextuality.

Your claim could be more transparent, and specifying the innovative solutions as well as the never ending problems. This would have allowed you to dig deeper into a few of the innovations and delved more into how they're impacting the problems. More back and forth with your texts would better showcase your intertextuality skills.

Other critiques are more cosmetic. Lessen/limit your use of 1st person. Only capitalize proper nouns. There also a few grammatical/syntax errors that can be easily caught if you read this out loud.

PAGE 1

Strikethrough.

Strikethrough.

Proofread This part of the sentence contains a grammatical error or misspelled word that ma your meaning unclear.

PAGE 2

Article Error You may need to remove this article.

Comment 3

You made this a plural then a possessive. It should have just been a possessive.

Strikethrough.

Comment 5

not capitalized

Comment 6

not capitalized

PAGE 3

Article Error You may need to remove this article.

Prep. You may be using the wrong preposition.

PAGE 4

Sp. This word is misspelled. Use a dictionary or spellchecker when you proofread your work.

Missing "," You may need to place a comma after this word.

Wrong Article You may have used the wrong article or pronoun. Proofread the sentence to make sure that the article or pronoun agrees with the word it describes.

Verb This verb may be incorrect. Proofread the sentence to make sure you have used the corr form of the verb.

PAGE 5

Comment 7

to

Strikethrough.

Prep. You may be using the wrong preposition.

Missing "," You may need to place a comma after this word.

Prep. You may be using the wrong preposition.

Article Error You may need to use an article before this word.

PAGE 6

PAGE 7

OUTCOME 1: 4 / 5

RHETORICAL AWARENESS: Writing employs style, tone, and conventions appropriate to the purpose of the paper.

EXCEPTIONAL (5)	Outcome 1.1 - Exceptional
SKILLED (4)	Outcome 1.1 - Skilled
PROFICIENT (3)	Outcome 1.1 - Proficient
DEVELOPING (2)	Outcome 1.1 - Developing
INADEQUATE (1)	Outcome 1.1 - Inadequate
NOT APPLICABLE (0)	N/A

OUTCOME 1: 4 / 5

RHETORICAL AWARENESS: Writing shows clear understanding of audience, and various aspects of the writing (structure, appeals, tone, sentences, and word choice) and strategically addresses that audience.

EXCEPTIONAL (5)	Outcome 1.2 - Exceptional
SKILLED (4)	Outcome 1.2 - Skilled
PROFICIENT (3)	Outcome 1.2 - Proficient
DEVELOPING (2)	Outcome 1.2 - Developing
INADEQUATE (1)	Outcome 1.2 - Inadequate
NOT APPLICABLE (0)	N/A

OUTCOME 2: 5 / 5

EVIDENCE & USE OF TEXTS: Writing demonstrates a sophisticated understanding of source texts

EXCEPTIONAL (5)	Outcome 2.1 - Exceptional

SKILLED (4)	Outcome 2.1 - Skilled
PROFICIENT (3)	Outcome 2.1 - Proficient
DEVELOPING (2)	Outcome 2.1 - Developing
INADEQUATE (1)	Outcome 2.1 - Inadequate
NOT APPLICABLE (0)	N/A

OUTCOME 2: 4 / 5

EVIDENCE & USE OF TEXTS: Course texts are used in strategic, focused ways (for example: summarized, cited, applied, challenged, re-contextualized) to support the goals of the writing.

EXCEPTIONAL (5)	Outcome 2.2 - Exceptional
SKILLED (4)	Outcome 2.2 - Skilled
PROFICIENT (3)	Outcome 2.2 - Proficient
DEVELOPING (2)	Outcome 2.2 - Developing
INADEQUATE (1)	Outcome 2.2 - Inadequate
NOT APPLICABLE (0)	N/A

OUTCOME 2: 4 / 5

EVIDENCE & USE OF TEXTS: The writing is intertextual, meaning that a “conversation” between texts and ideas is created in support of the writer’s goals.

EXCEPTIONAL (5)	Outcome 2.3 - Exceptional
SKILLED (4)	Outcome 2.3 - Skilled
PROFICIENT (3)	Outcome 2.3 - Proficient
DEVELOPING (2)	Outcome 2.3 - Developing

INADEQUATE (1)	Outcome 2.3 - Inadequate
NOT APPLICABLE (0)	N/A

OUTCOME 3: 4 / 5

CLAIMS & ARGUMENTATION: The argument utilizes a clear organizational strategy and effective transitions that develop its line of inquiry.

EXCEPTIONAL (5)	Outcome 3.1 - Exceptional
SKILLED (4)	Outcome 3.1 - Skilled
PROFICIENT (3)	Outcome 3.1 - Proficient
DEVELOPING (2)	Outcome 3.1 - Developing
INADEQUATE (1)	Outcome 3.1 - Inadequate
NOT APPLICABLE (0)	N/A

OUTCOME 3: 4 / 5

CLAIMS & ARGUMENTATION: The analysis is appropriately complex, based in a claim that emerges from and explores the argument.

EXCEPTIONAL (5)	Outcome 3.2 - Exceptional
SKILLED (4)	Outcome 3.2 - Skilled
PROFICIENT (3)	Outcome 3.2 - Proficient
DEVELOPING (2)	Outcome 3.2 - Developing
INADEQUATE (1)	Outcome 3.2 - Inadequate
NOT APPLICABLE (0)	N/A

OUTCOME 3: 4 / 5

CLAIMS & ARGUMENTATION:The purpose of the analysis (why what is being argued matters) is evident.

EXCEPTIONAL (5)	Outcome 3.3 - Exceptional
SKILLED (4)	Outcome 3.3 - Skilled
PROFICIENT (3)	Outcome 3.3 - Proficient
DEVELOPING (2)	Outcome 3.3 - Developing
INADEQUATE (1)	Outcome 3.3 - Inadequate
NOT APPLICABLE (0)	N/A

OUTCOME 3: 5 / 5

CLAIMS & ARGUMENTATION: The analysis involves scrutiny and examination of evidence and assumptions in support of the argument.

EXCEPTIONAL (5)	Outcome 3.4 - Exceptional
SKILLED (4)	Outcome 3.4 - Skilled
PROFICIENT (3)	Outcome 3.4 - Proficient
DEVELOPING (2)	Outcome 3.4 - Developing
INADEQUATE (1)	Outcome 3.4 - Inadequate
NOT APPLICABLE (0)	N/A

OUTCOME 4: 4 / 5

REVISING, EDITING & PROOFREADING: Errors of grammar, punctuation, and mechanics do not interfere with reading and understanding the writing.

EXCEPTIONAL (5)	Outcome 4.1 - Exceptional
SKILLED (4)	Outcome 4.1 - Skilled

PROFICIENT (3)	Outcome 4.1 - Proficient
DEVELOPING (2)	Outcome 4.1 - Developing
INADEQUATE (1)	Outcome 4.1 - Inadequate
NOT APPLICABLE (0)	N/A

OUTCOME 4: 4 / 5

REVISING, EDITING & PROOFREADING: Careful editing is evident, and writing is constructed carefully at the word and sentence levels.

EXCEPTIONAL (5)	Outcome 4.2 - Exceptional
SKILLED (4)	Outcome 4.2 - Skilled
PROFICIENT (3)	Outcome 4.2 - Proficient
DEVELOPING (2)	Outcome 4.2 - Developing
INADEQUATE (1)	Outcome 4.2 - Inadequate
NOT APPLICABLE (0)	N/A

OUTCOME 4: 5 / 5

REVISING, EDITING & PROOFREADING: MLA Citations are used and formatted correctly.

EXCEPTIONAL (5)	MLA Citations included and formatted correctly.
SKILLED (0)	N/A
PROFICIENT (0)	N/A
DEVELOPING (0)	N/A
INADEQUATE (0)	MLA Citations either absent or formatted incorrectly.
NOT APPLICABLE	N/A

(0)