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ESL 118 - James Corona

IRP Proposal

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Word Count: 533

How can Artificial Intelligence be used as an Effective Technological Tool to improve Medical Technology?

My research paper will be an argumentative paper focusing on how AI can be used as an effective technological tool to improve medical technology. Personally, I am interested in AI, especially as it relates to the medical field, and have tried to keep myself informed of current developments in the world of AI medicine. In some diseases that are difficult to solve by conventional medical means, such as cancer, I am deeply touched when I see that AI can diagnose more effectively and more specifically. In the context of an increasingly aging population, the use of AI to improve medical technology is a very good solution. Currently, my research question is: How can AI be used as an effective technological tool to improve medical technology?

Most of the information I have found so far exemplifies the improvement of AI for medical technology in terms of a particular medical field. Wang (2022) studied how AI can help pulmonologists and radiologists diagnose lung cancer. Rachel (2020) argued that AI can improve psychotherapy research and practice. They also suggest that AI could have beneficial effects, improving empirical analysis through data-driven model development, tools to address the limitations of traditional regression methods, and new approaches to personalized treatment. In addition, AI has the potential to expand the reach of researchers and therapists by expanding our ability to collect data and provide interventions beyond the laboratory or clinical office. Mariana and Catia (2020) focused on AI to improve the management of pneumonia and concluded that because AI can process large amounts of data and perform mathematical functions such as machine learning and neural networks , AI can play a revolutionary role in supporting the clinical decision-making process in pneumonia.

Azimova (2020) mentions the application of AI in healthcare for medical technology improvement in Uzbekistan. Vijayan and Kihlberg (2022) state that the use of AI-driven solutions can achieve a steady increase in the rate of clinical drug development. Qing (2022) states that AI can optimize medical information processing and Qing also argues the point with experimental data. To prove my point, I will use relevant experimental data to emphasize it.

Azimova (2020) mentions that the main problems of using AI on a large scale in healthcare in Uzbekistan may be two: the huge amount of data to be assimilated and the human resource issues. These problems require a lot of human and financial resources and do not guarantee a good result, which is an unaffordable economic cost for small countries. I will use more evidence to prove the counter argument.

So far, my thesis statement is that AI helps doctors diagnose diseases more easily, AI accelerates drug development, and AI optimizes medical information processing and emergency care. First, I will organize my research paper based on the above thesis statement. I will expand on each of these points, using arguments and data separately. After presenting the point I want to argue, I will present a counterpoint and argue it with evidence.

Before I begin my argument, I will use a paragraph to explain the definition of medical AI and the scope of this concept.