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The Role of Artificial Intelligence in Reshaping Healthcare: Challenges and Solutions

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Abstract: ***Healthcare systems have been offering services and advantages to people all over the world, playing a crucial role in enhancing health and quality of life. However, there are still incidents of incompetence in hospitals that endanger life. These effects on patients are becoming more prevalent at an accelerated rate. Thank goodness, technological developments like artificial intelligence (AI) and machine learning have shown to be effective in minimizing negative effects. Hospitals are now using AI to enhance care, transforming the medical field and improving patient outcomes.***

I. INTRODUCTION

Healthcare has always been important for society's ongoing evolution to lengthen lifespans, prevent diseases, and improve well-being. Things are now more easily accessible for people thanks to developments in the healthcare sector. The ArogyaSetu App and India's E Sanjeevani service are two notable examples of how to streamline services while maintaining efficiency. Medical understaffing and surgical errors are two major problems that healthcare systems around the world face, despite benefits and positive aspects.

These difficulties have an effect on patients and medical professionals. The Bundaberg Hospital Scandal, in which a surgeon by the name of "Dr. Jayant Patel" admitted guilt for patient outcomes brought on by surgical errors, is an illustration of such a challenge. Thankfully, technological developments like Artificial Intelligence (AI) have contributed to addressing these challenges. AI is now widely used in hospitals to lessen the effects.

II. AI SOLVING THE ISSUE OF UNDERSTAFFING

Medical understaffing is a serious issue that affects healthcare systems all over the world. As a result, there are not enough nurses and doctors to meet the demand for patient care. Understaffing in the healthcare industry has serious repercussions. Burnout among overworked nurses can have a negative effect on patient care. As they spend time on paperwork and other administrative duties that limit their ability to interact directly with patients, nurses are also frequently burdened. Additionally, it is difficult to recruit healthcare workers to rural and remote areas, which worsens staffing shortages like those seen during the COVID 19 outbreak. Fortunately, artificial intelligence has offered a solution with the introduction of AI powered nurses, who use algorithms and machine learning techniques to offer support in patient care with their wide range of capabilities. They also help with administrative tasks like appointment scheduling, managing patient records, and handling paperwork, which significantly lessens the administrative burden on human nurses. Key characteristics of virtual nurses include constant data monitoring and the capacity to identify departures from values. With the help of these virtual nurses, healthcare professionals can monitor patients' health conditions without having to be physically present. Therefore, virtual nurses contribute to reducing the negative effects of understaffing on healthcare systems.

III. AI: A SOLUTION TO SURGICAL ERRORS

Serious mistakes, also known as "never events" in the medical community, can happen during surgical procedures as a result of human error or system failure. These mistakes include things like improper surgical technique, retained instruments, and insufficient postoperative infection control measures. The results of mistakes can be disastrous. They can result in prolonged hospital stays, additional corrective procedures, and long-lasting pain and suffering in addition to harming patients. Patients may also suffer trauma and a lower quality of life as a result of the disabilities or disfigurements brought on by these mistakes. Thankfully, artificial intelligence is used to tackle this difficult situation. Intelligent robots are incredibly useful for tackling surgical challenges because they can provide precise real-time data analysis capabilities and assistance during surgery. These robots exhibit stability and precision, greatly lowering the likelihood of errors, especially in complicated procedures. Their direction makes sure that procedures follow established plans and prevents surgeries being performed in the wrong place. Robots powered by AI have the potential to revolutionize safety, thereby enhancing patient outcomes and reducing surgical errors.

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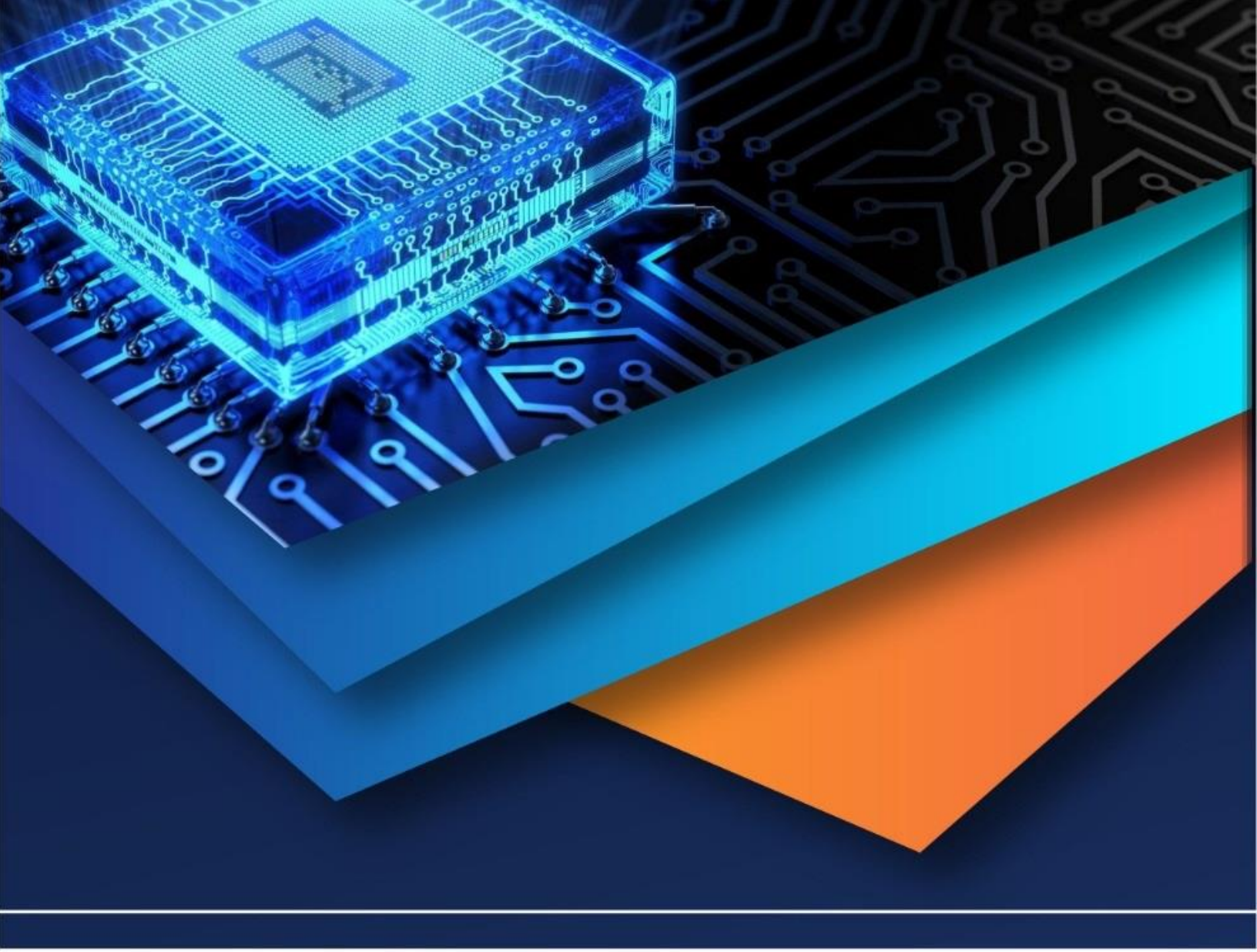
IV. CONCLUSION

In conclusion, healthcare has influenced humanity throughout history by increasing quality of life, extending lifespans, and preventing diseases. It continues to be a pillar of society that improves convenience and efficacy by fusing technological advancements with human expertise. ArogyaSetu (a platform) emerged as an exceptional performer in medical care in India; however, in spite of its impressive features, the healthcare sector still faces challenges like insufficient staffing and incorrect calculations. Patients have been affected by these consequences. But employing intelligence can significantly lessen these effects. Unquestionably, AI has enhanced healthcare. truly improving the quality of human life.

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