

The integration of artificial intelligence (AI) into healthcare has initiated a transformative era, reshaping how medical services are delivered and managed. AI's capability to process vast amounts of data and apply machine learning algorithms holds immense potential for enhancing patient care, optimising healthcare operations, and driving medical innovation. However, the rapid introduction of advanced medical devices, coupled with insufficient training, has led to errors that compromise patient safety (Tase et al., 2022) (estava et al., 2019). This study examines the intersection of AI and medical device usage, proposing an AI-driven solution to mitigate human error and improve healthcare outcomes (Rajkomar et al., 2019).

Python was employed as the programming language, and deep learning techniques were utilised for the machine learning component. The primary method involved the application of image recognition technology, which was tested on an infusion pump across three separate trials to determine the error percentage. A secondary method involved the creation and application of a QR code, which was affixed to the infusion pump. Users could scan the code with their smartphones to access the device's user manual. This approach was also tested three times to assess its error rate.

The image recognition method successfully identified the infusion pump with high reliability. The QR code method, while taking longer to set up, provided a faster and efficient way to access the user guide. Both methods demonstrated successful identification of the infusion pump, with the QR code offering a quicker retrieval of information once operational.

Although the QR code method offers faster access to user guides. However, scratches on the QR code prevent scanning, and the need for mass printing and adhesives raises environmental concerns (Ozturkcan and Kitapci, 2023). In contrast, image recognition is less environmentally taxing and remains functional even if the device is scratched. Additionally, image recognition can easily adapt to updates in the medical device, while the QR code method would require reprinting, leading to increased costs and time. Thus, while both methods are effective, image recognition presents a more sustainable and adaptable solution.

## **References**

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