

## Implementing an Intelligent Patient Care System Utilizing Machine Learning to Advance Healthcare Practices and Patient Outcomes

SP Jayasekera<sup>1#</sup> and LP Kalansooriya<sup>1</sup>

<sup>1</sup>Faculty of Computing, General Sir John Kotelawala Defence University, Ratmalana, Sri Lanka

#37-cs-0009@kdu.ac.lk

### Abstract

This research paper introduces an Intelligent Patient Care System (IPCS) that aims to transform healthcare practices and improve patient outcomes. By utilizing machine learning, specifically the random forest algorithm, the IPCS strives to enhance diagnostic accuracy and treatment recommendations. The study explores the advantages and limitations of existing IPC systems and emphasizes the potential benefits of the proposed system. The IPCS facilitates informed decision-making by medical assistants and doctors through the identification of patterns and prediction of disease risks. The system streamlines communication and information flow among healthcare providers, ensuring a seamless workflow. Notable features include the ability to gather patient information from medical assistants, diagnose diseases, recommend tests, and provide comprehensive data snapshots to doctors. The research concludes that the IPCS has the potential to enhance patient satisfaction, reduce healthcare costs, and improve the overall quality of care by embracing data-driven insights and innovative solutions.

**Keywords:** *Intelligent Patient Care System, Machine learning, Diagnostic accuracy, Treatment recommendations, Healthcare industry*