



INFORMATICS  
INSTITUTE OF  
TECHNOLOGY

INFORMATICS INSTITUTE OF TECHNOLOGY

In Collaboration with

UNIVERSITY OF WESTMINSTER

**CardioRisk Pro**

**Heart Disease Prediction System**

A dissertation by  
Mr. Sayuru Gunathilaka

Supervised by  
Mr. Asanka Suraweera

Submitted in partial fulfilment of the requirements for the BEng (Hons) Software  
Engineering degree at the University of Westminster.

May 2023

## **ABSTRACT**

Heart disease is a prevalent and severe health condition that impacts a vast number of people globally. Being one of the top causes of mortality, timely detection and accurate prediction of heart disease can play a vital role in enhancing patient outcomes. To achieve this, researchers have turned to advanced machine learning and deep learning techniques for developing predictive models. The heart disease prediction system proposed here leverages various machine learning algorithms and deep learning techniques, such as decision trees, neural networks, random forests, and support vector machines (SVM), to estimate the likelihood of heart disease occurrence.

The proposed heart disease prediction system has the potential to revolutionize healthcare by diagnosing heart disease. Results show that the proposed system achieves high accuracy in predicting heart disease, and outperforms existing prediction models. Ultimately, the proposed system can help reduce healthcare costs and improve patient outcomes.

**Keywords:** Heart Disease Prediction, Machine Learning, Deep Learning, Neural Networks, Decision Trees, SVM, Data Science, Ensemble Learning