## Artificial Intelligence

## and

## Machine Learning

Project Abstract

Semester-IV (Batch-2022)

Heart Disease Predictor

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Description automatically generated with low confidence

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**Title:** Heart Disease Prediction Using Artificial Intelligence and Machine Learning Techniques

**Abstract:**

Heart disease remains one of the leading causes of mortality worldwide, necessitating effective early detection and prevention strategies. In recent years, the integration of Artificial Intelligence (AI) and Machine Learning (ML) techniques has shown promising results in various healthcare applications, including disease prediction. This project aims to leverage advanced AI and ML algorithms to develop a robust predictive model for identifying individuals at risk of heart disease.

The proposed system utilizes a comprehensive dataset comprising various demographic, clinical, and behavioral attributes obtained from individuals. Through meticulous data preprocessing and feature engineering, relevant features are extracted to enhance the predictive capabilities of the model. Subsequently, a diverse set of ML algorithms, including but not limited to Decision Trees, Random Forest, Support Vector Machines, and Neural Networks, are employed to train and validate the predictive model.

Validation of the model's performance is conducted using appropriate evaluation metrics such as accuracy, precision, recall, and F1-score. Furthermore, techniques such as cross-validation and hyperparameter tuning are employed to ensure the robustness and generalizability of the model across different datasets.

The developed heart disease prediction system holds significant potential in aiding healthcare practitioners in early risk assessment and personalized intervention strategies. By leveraging the power of AI and ML, this project contributes to the advancement of predictive healthcare analytics, ultimately leading to improved patient outcomes and reduced healthcare burdens associated with heart disease.