## Artificial Intelligence

## And

## Machine Learning

Project Abstract

Semester-IV (Batch-2022)

#### **Survival Prediction on the Titanic Ship**

A red and white sign

Description automatically generated with low confidence

**Supervised By: Submitted By:**

Rajiv Bhardwaj Sumit Parsad, 2210990873

Suraj Adde, 2210990876

**Department of Computer Science and Engineering**

Chitkara University Institute of Engineering & Technology,

Chitkara University, Punjab

**Title:**

Predictive Modeling of Survival on the Titanic: An Artificial Intelligence and Machine Learning Approach

**Abstract:**

The sinking of the Titanic remains a poignant historical event, prompting ongoing fascination and research. This project endeavors to contribute to the understanding of survival patterns on the Titanic using Artificial Intelligence and Machine Learning (AIML) techniques. The primary objective is to develop a robust predictive model that can accurately forecast the likelihood of passengers surviving the maritime disaster.

The dataset utilized for this analysis comprises a comprehensive set of passenger attributes, including socio-economic status, age, gender, and cabin class. Leveraging advanced AIML algorithms such as decision trees, random forests, and support vector machines, we aim to discern intricate patterns within the data and create a predictive model capable of identifying key factors influencing survival outcomes.

Our methodology involves data preprocessing to handle missing values and categorical variables, followed by feature engineering to enhance the model's performance. The project emphasizes the importance of model evaluation and validation, employing metrics like accuracy, precision, recall, and the receiver operating characteristic (ROC) curve to assess the predictive prowess of the developed models.

Furthermore, the study delves into the interpretability of the models, seeking insights into the variables that most strongly influence the survival predictions. Through a comprehensive analysis, we aim to shed light on the socio-demographic factors that played a pivotal role in determining survival rates on the Titanic.

In conclusion, this project aspires to provide a valuable contribution to the field of predictive modeling by applying AIML techniques to the historical context of the Titanic disaster. By unraveling patterns in passenger data, our endeavor aims to enhance our understanding of survival dynamics and pave the way for more informed insights into the factors that influenced outcomes during this tragic maritime event.