INTRODUCTION

The overarching idea of this machine learning project is to predict the calories burn during the workout. In this project we first build a machine learning system that can predict the amount of calorie burnt during exercise. In today’s world many people are inquisitive about the workout that they do and the weight loss plan that they take and how much calorie do they burn once they workout. To solve this problem, we can use ML algorithm such as XGBoost regressor.

The dataset that I am using is Exercise and Calorie dataset. Exercise dataset has 15000 entities of different persons. It has the features User Id, Age, Gender, Height, Weight, Duration of workout, average Heartbeat and Body temperature. Calorie dataset consists of Burned calories of each person. It has features User Id and Calorie.

The proposed architectures in the paper are Linear Regressor and XGBoost regressor. But after a brief study, I felt that the XGBoost regressor is more useful and advantageable to this task.

Aswanth K P

**2.SUPPORTING LITERATURE**

**Literature Review**

Paper 1:- Paper 1: M. Nipas, A. G. Acoba, J. N. Mindoro, M. A. F. Malbog, J. A. B. Susa and J. S. Gulmatico, "Burned Calories Prediction using Supervised Machine Learning: Regression Algorithm," 2022 Second International Conference on Power, Control and Computing Technologies (ICPC2T), 2022, pp. 1-4, doi: 10.1109/ICPC2T53885.2022.9776710.

Regular physical activities are essential to staying healthy and fit. The estimation of calories burned by individuals is based on a formula and MET charts. This study aims to predict the calories burned using a regression model as one of the machine learning algorithms to give more accurate results. Data preparation, cleaning, and analysis are the primary steps before they can be fed to the regression models. Model training and testing using K-fold validation were done to determine the best model for the study. The performance and prediction accuracy of regression models were evaluated based on the result of model testing after ten (10) iterations. The average accuracy was computed and the result shows that Random Forest regression is the best model for the study with an accuracy of 95.77%. It is very important to visualize and study the relationships of the variables in the data because it may affect the performance of the algorithm in predicting the value of the target variable. The Random Forest regression model was able to predict the calories burned with a high accuracy rate

# Paper 2: Sona P Vinoy “Calorie Burn Prediction Analysis Using XGBoost Regressor and Linear Regression Algorithms” Proceedings of National Conference on Emerging Computer Applications 2022(NCECA 2022), Amal Jyothi College of Engineering Kanjirappally, Kottayam, India, pp. 187-191 (978-93-5607-317-3).

The overarching idea of this research project is to make a comparative study of machine learning algorithms to predict the calories burn during the workout. In this paper we first build a machine learning systems that can predict the amount of calories burnt during exercise. In today’s world many people are inquisitive about the workout that they do and the weight loss plan that they take and how much calorie do they burn once they workout. To solve this problem we can use ML alggoirthms such as XGBoost regressor and Linear Regression.

Paper 3: Rachit Kumar Singh, Vaibhav Gupta “Calories Burnt Prediction Using Machine Learning” International Journal of All Research Education and Scientific Methods (IJARESM), ISSN: 2455-6211 Volume 9, Issue 12, December-2021, Impact Factor: 7.429

Machine Learning is a category of algorithms that allows software applications to become more accurate in predicting outcomes without being explicitly programmed. The basic premise of machine learning is to build models and employ algorithms that can receive input data and use statistical analysis to predict an output while updating outputs as new data becomes available. These models can be applied in different areas and trained to match the expectations of management so that accurate steps can be taken to achieve the organization’s target.The object of this research paper is to create a project that can be used predict calories burnt using Machine Learning with Python. Xgboost Regression model is used in this project.