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CS 472: Machine Learning Final Project Proposal

For my final project, I would like to work individually on a project where I compare/contrast model performance on predicting calorie expenditure during a workout. The dataset I will use is here: https://www.kaggle.com/datasets/ruchikakumbhar/calories-burnt-prediction. There is a competition on Kaggle that has a modified version of this dataset and has separated it into training, test, and validation sets that I may look into using instead of manipulating the original myself. Both versions of the dataset contain features like gender, age, height, weight, workout duration, and heartrate. Using these features, I will develop models that predict the calorie expenditure of a workout.

The models that I'd be potentially interested in comparing would be a linear regression model, some kind of decision tree model, and possibly a neural network. I am undecided on if I would like to try developing models myself, or using python modules like Scikit-learn, XGboost or PyTorch and comparing those. I would like to try developing at least one of the models myself. In my report, I plan on analyzing the accuracy and computational efficiency of each model and comparing the trade-offs of each.