



ActivPal Week 15

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WHAT HAVE WE DONE
PREVIOUS WEEK?



WHAT ARE OUR GOALS
FOR THE NEW SPRINT?

What have we
done in the
previous week?



1. Finalized MET regression
models



2. Written chapters of
research paper

Applied Test Set On MET Prediction Models

Compared Random Forest with XGBoost after applying the test results

Activity	Random Forest	Random Forest Test		XGBoost	XGBoost Test	
	R Squared Score Cross Validation	R ²	MSE	R Squared Score Cross Validation	R ²	MSE
Walking	0.40 (+/- 0.15)	0.40	0.65	0.32 (+/- 0.12)	0.29	0.70

We decided to pick Random Forest for Walking

Activity	Random Forest	Random Forest Test		XGBoost	XGBoost Test	
	R Squared Score Cross Validation	R ²	MSE	R Squared Score Cross Validation	R ²	MSE
Running	0.60 (+/- 0.20)	0.58	1.57	0.63 (+/- 0.15)	0.45	1.80

We decided to pick Random Forest for Running

Applied Test Set On MET Prediction Models

Compared Random Forest with XGBoost after applying the test results

Activity	Random Forest	Random Forest Test		XGBoost	XGBoost Test	
	R Squared Score Cross Validation	R ²	MSE	R Squared Score Cross Validation	R ²	MSE
Cycling Light	0.41 (+/- 0.28)	-0.70	1.78	0.41 (+/- 0.23)	-1.03	1.95

We decided to pick Random Forest for Cycling Light

Activity	Random Forest	Random Forest Test		XGBoost	XGBoost Test	
	R Squared Score Cross Validation	R ²	MSE	R Squared Score Cross Validation	R ²	MSE
Cycling Heavy	-0.39 (+/- 1.18)	0.02	1.67	0.12 (+/- 0.59)	-0.08	1.23

We decided to pick XGBoost for Cycling Heavy

Final result of the MET prediction models

- Our conclusion:
 - Models are overfitting
- Our theory is that there is too little data
- The test set had only 14/15 rows of data and the train/validation set had 84/22 rows of data

Written multiple iterations of research paper chapters

- Introduction
- Subject field
- Study design
- Data: Subjects
- Methods: Activity classification
- Methods: International recommendation of PA
- Results: Activity classification
- Results: International recommendation of PA





What are our goals for the new sprint?



01

Continue writing
paper

02

Discuss models
with teachers

A person wearing a dark suit and a light-colored shirt is holding a white rectangular sign with both hands. The sign has the word "QUESTIONS?" written on it in a bold, dark blue, sans-serif font. The person's hands are visible at the bottom of the sign, and their fingers are slightly curled. The background is a solid dark blue color.

QUESTIONS?