



ActivPal Week 11

Adnan Akbas
Ali Safdari
Mark Boon
Matthew Turkenburg
Colin Werkhoven

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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?



Cross validated Activity Recognition model



Created multiple models for MET regression



Compared the various MET regression models



Started development on application, showing an overview of weekdata

Activity recognition

ACTIVITIES RECOGNIZED

- Walking
- Running
- Cycling
- Standing
- Sitting

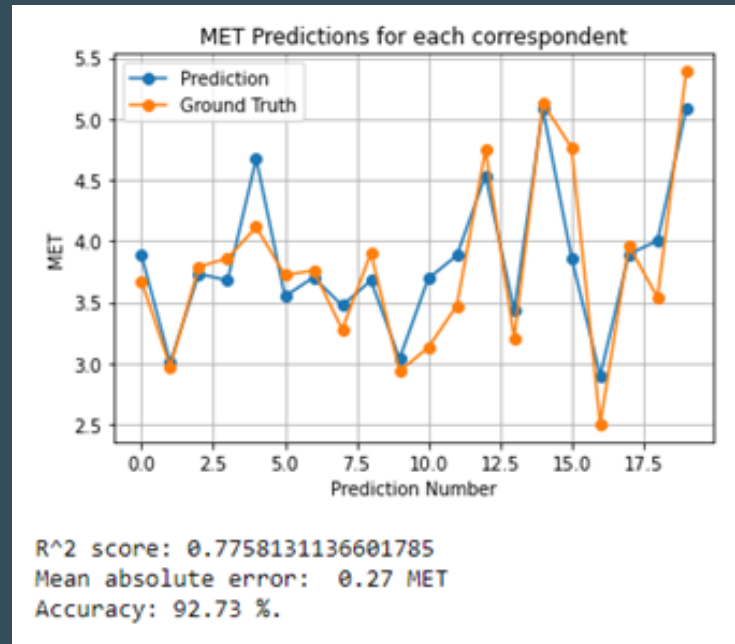
Dataset	Accuracy	F1	Precision	Recall
Validation	99%	99%	99%	99%
Test	98%	99%	99%	98%

```
accuracy: 0.97 +-0.03  
f1_score: 0.98 +-0.03  
precision_score: 0.98 +-0.02  
recall_score: 0.97 +-0.03
```

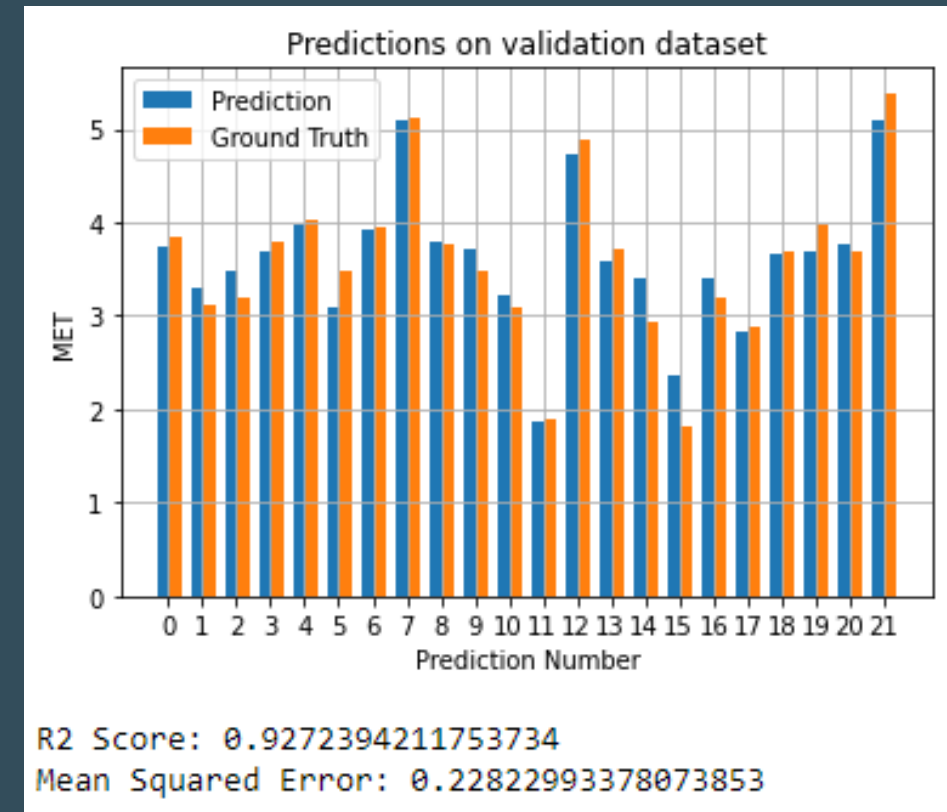
Improved our Walking Random Forest Model

- Walking activity
- Added 2 new respondents to our train data
- Added a new feature which improved the results

Results previous week



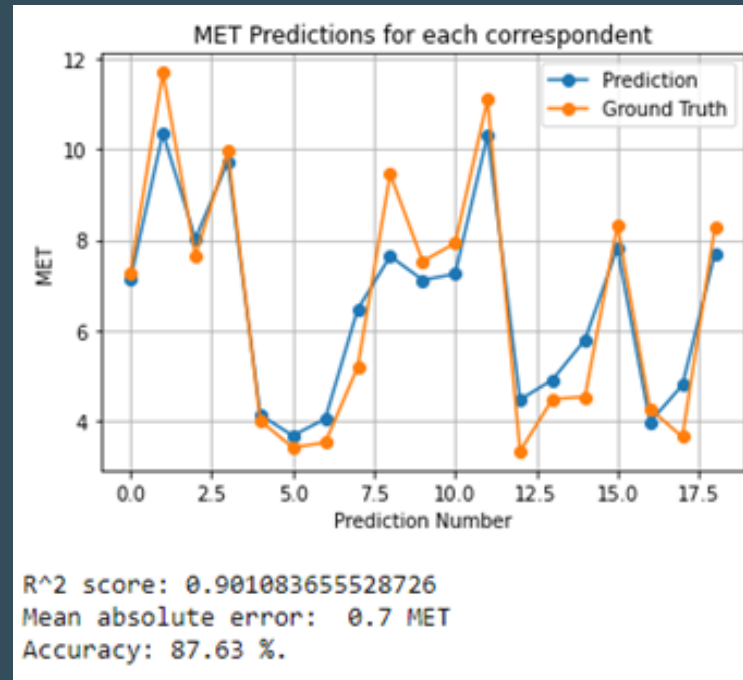
Results this week



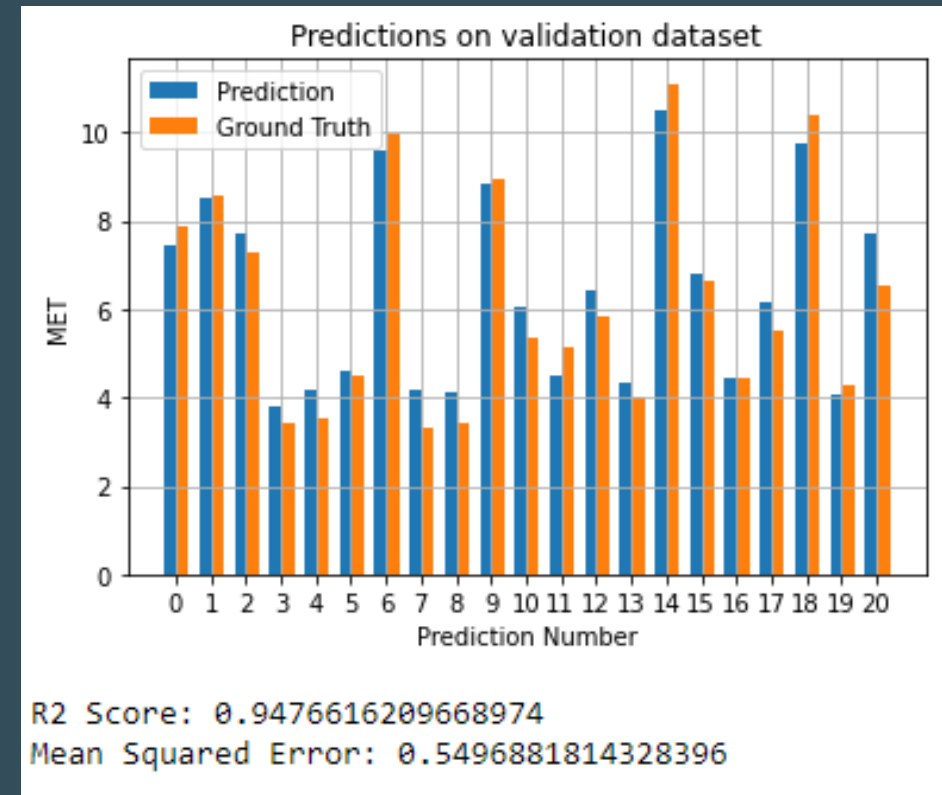
Improved our Running Random Forest Model

- Running activity
- Added 2 new respondents to our train data
- Added 2 new feature which improved the results

Results previous week



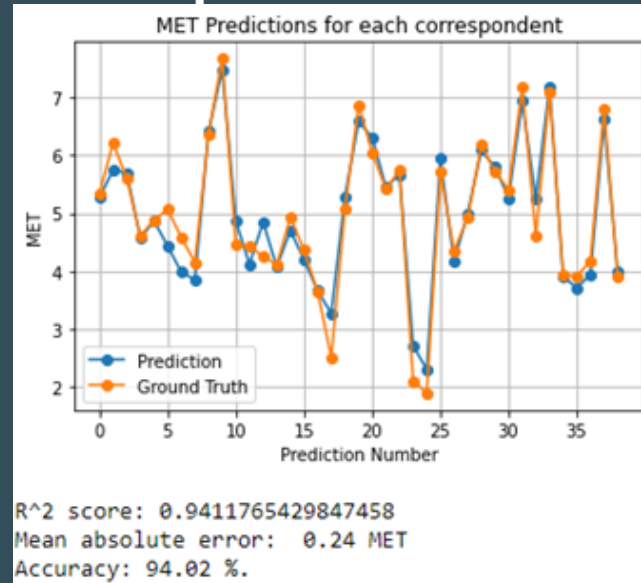
Results this week



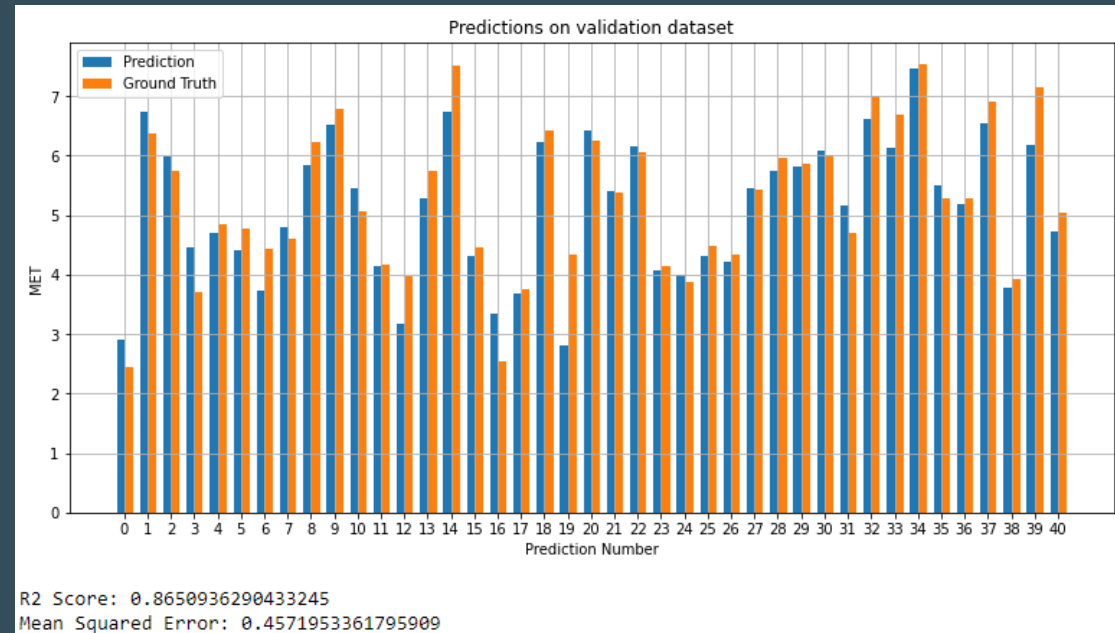
Updated our Cycling Random Forest Model

- Cycling activity
- Added 2 new respondents to our train data
- Removed 1 feature

Results previous week



Results this week



Applying XGBoost Regression Model on Running Activity

- Two different approaches for our XGBoost model
- Pick the most optimal as our final model

	XGboost (Matt)	XGboost 2 (colin)
Trees	Optimal trees based on score (1-200 trees)	Optimal trees: 37 Based on (1-50 trees)
Features	RFE for feature selection (12 features)	RFE for the best features. Result: 6 features
Amount of iterations to find model	$200 \times 12 + 1 = 2401$ models to find best model	1
r2-score	0,85	0,93
Mean Squared Error	0,81	0,7

What are our goals for the new sprint?

01

Synchronize the setup between the models so we can really compare them

02

Validate correctness of our models with teachers and CBS

03

Apply our models to the week data in the application

04

Start writing the paper

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 background is a solid dark blue color.

QUESTIONS?