ActivPal Week 11

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Table of contents

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

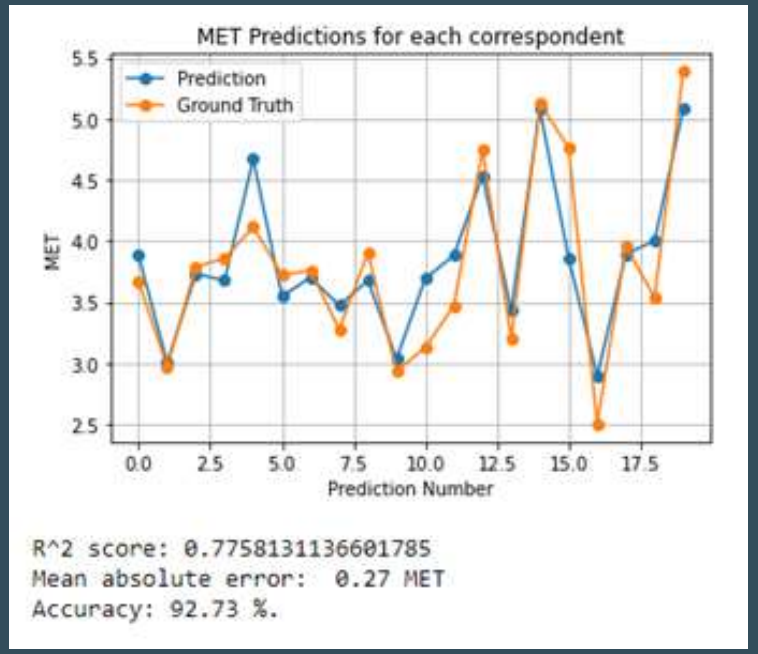
Dataset	Accuracy	F1	Precision	Recall
Validation	99%	99%	99%	99%
Test	98%	99%	99%	98%

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

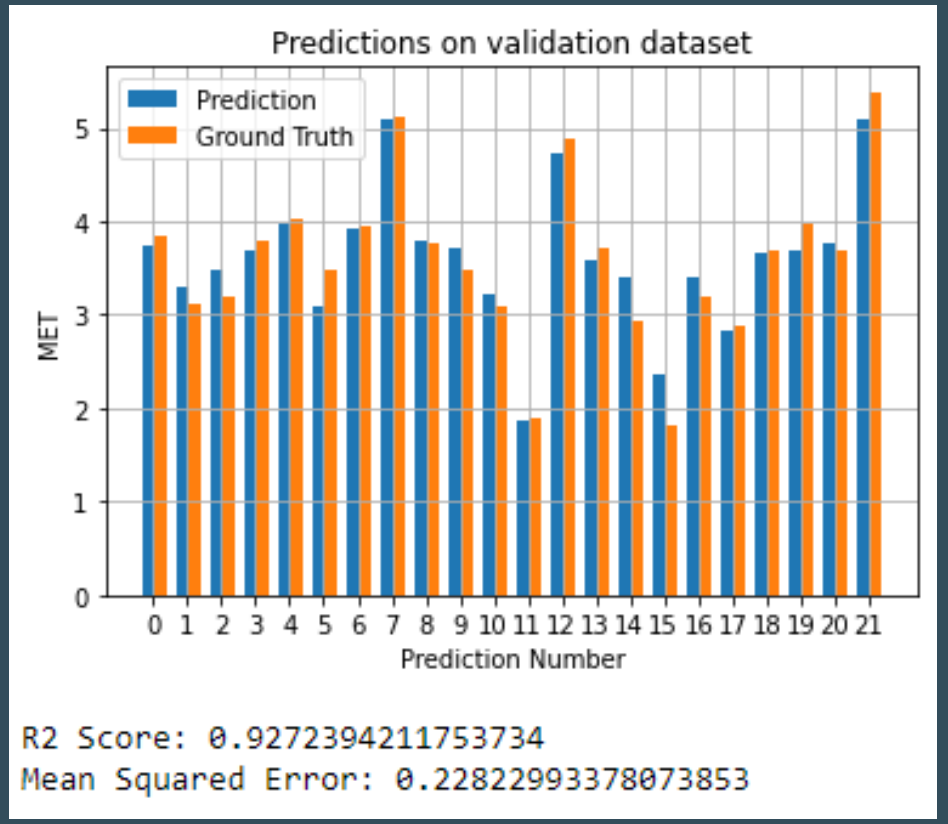
Improved our Walking Random Forest Model

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

Results previous week



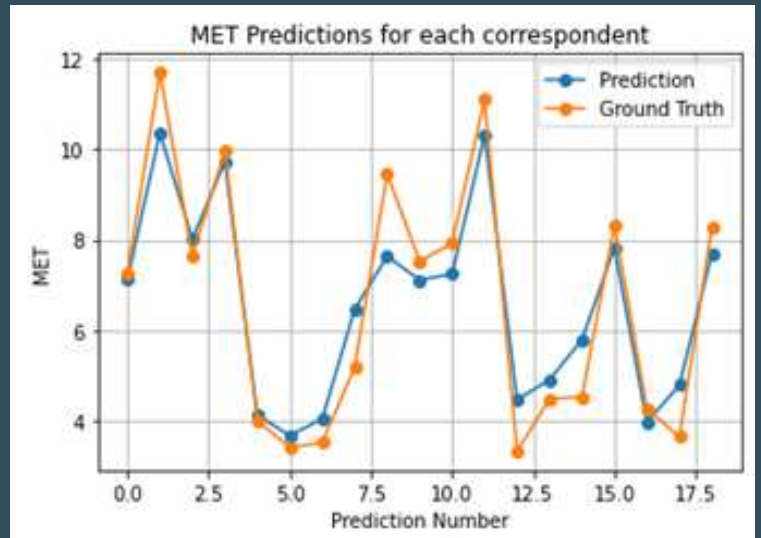
Results this week



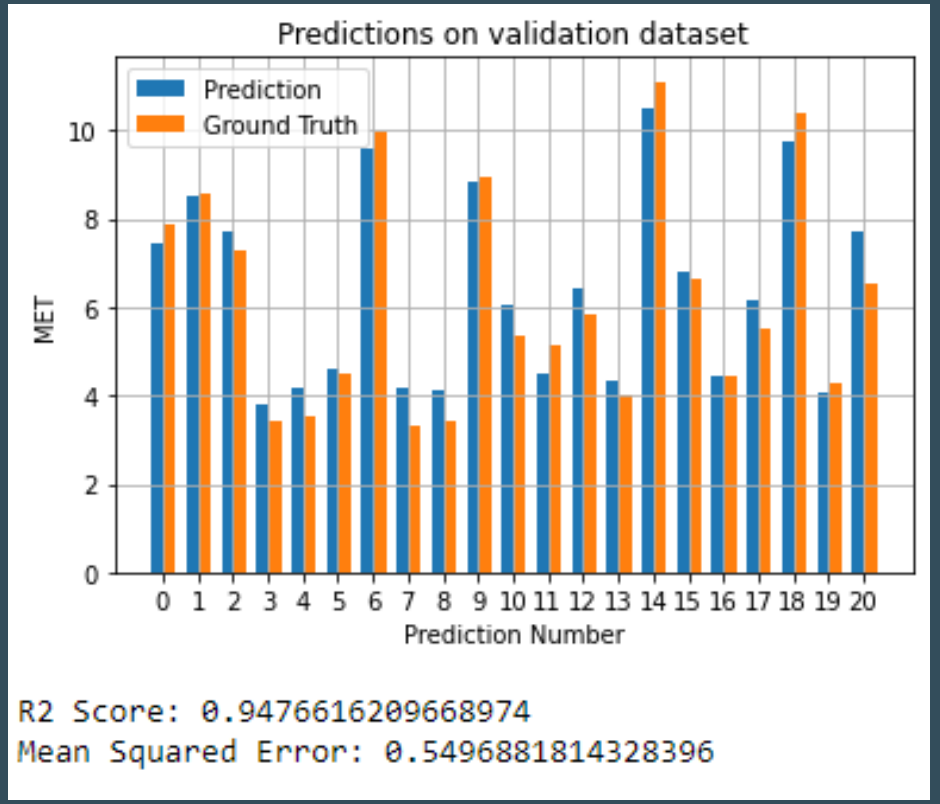
Improved our Running Random Forest Model

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

Results previous week



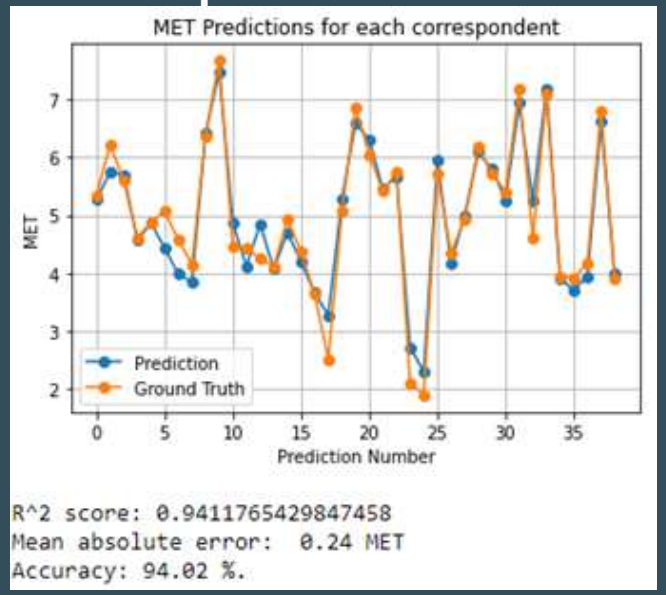
Results this week



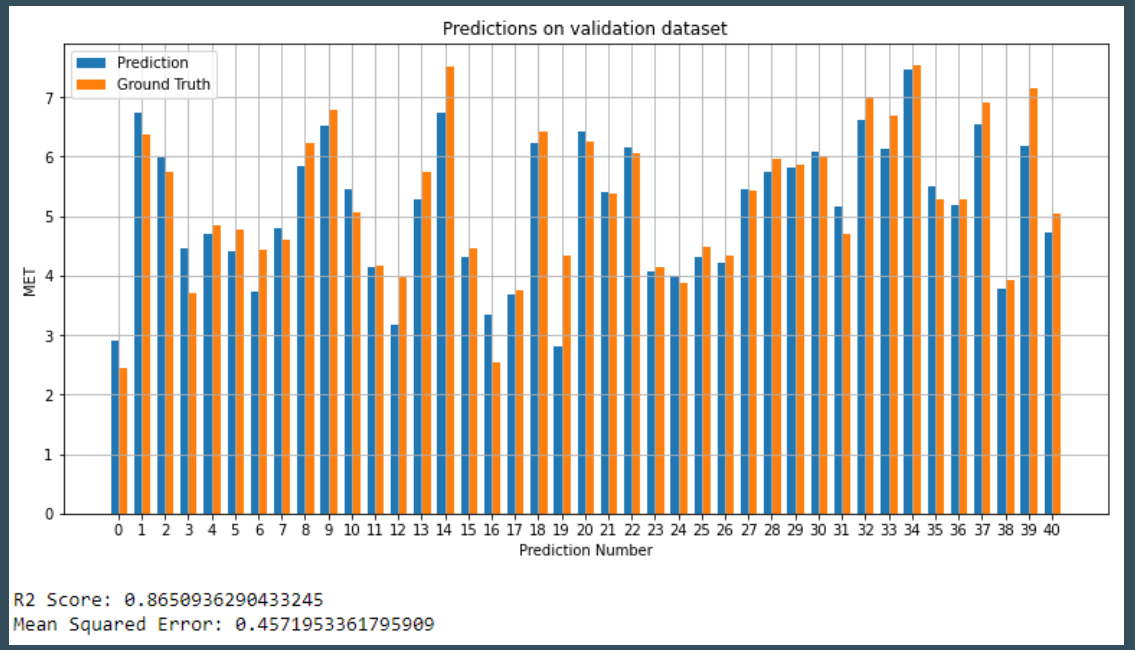
Updated our Cycling Random Forest Model

- 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	200x12+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


QUESTIONS?