

# activpal\_g\_to\_acceleration

January 12, 2021

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```
[1]: from sensors.activpal import *  
     from helpers import pandas_helper  
     from utils import read_functions  
     import matplotlib.pyplot as plt
```

```
[2]: resp = 'BMR002'  
     activpal = Activpal()
```

```
[3]: activities_df = read_functions.read_activities(resp)  
     activities_df.head(10)
```

```
[3]:
```

	start	stop
activiteit		
springen	2019-09-16 14:29:18	2019-09-16 14:30:18
traplopen	2019-09-16 14:31:13	2019-09-16 14:32:04
fietsen licht	2019-09-16 14:41:29	2019-09-16 14:46:29
fietsen zwaar	2019-09-16 14:46:29	2019-09-16 14:51:29
lopen	2019-09-16 15:12:00	2019-09-16 15:17:00
rennen	2019-09-16 15:17:00	2019-09-16 15:22:00
zitten	2019-09-16 15:31:00	2019-09-16 15:36:00
staan	2019-09-16 15:45:00	2019-09-16 15:50:00

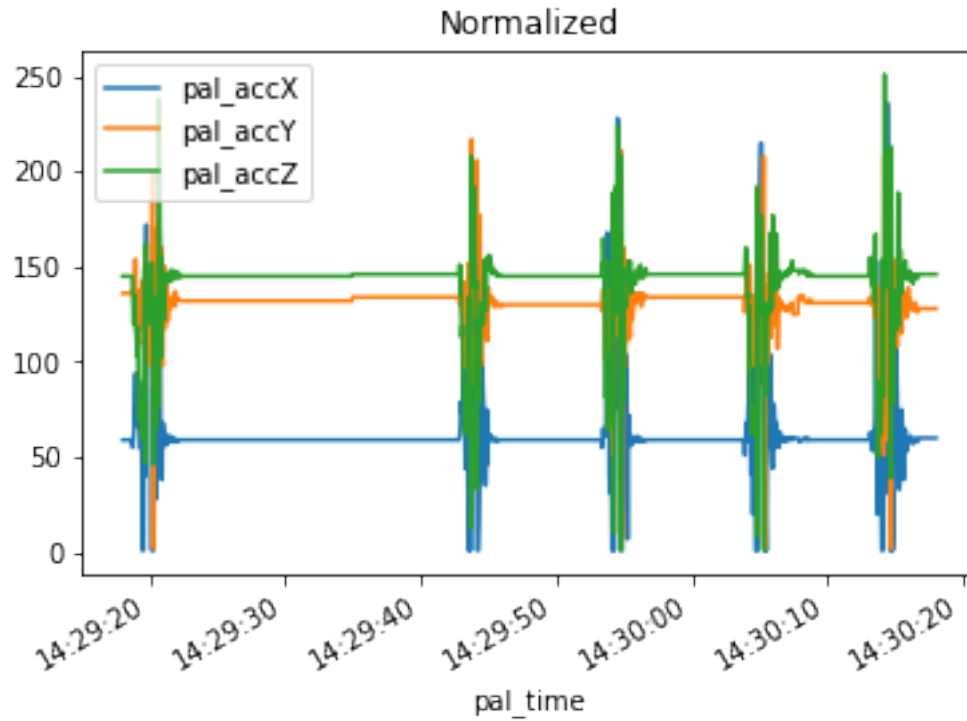
```
[4]: start = activities_df.iloc[0].start  
     stop = activities_df.iloc[0].stop  
     print(activities_df.iloc[0])
```

```
start    2019-09-16 14:29:18  
stop     2019-09-16 14:30:18  
Name: springen, dtype: datetime64[ns]
```

```
[5]: activpal_df = activpal.read_data(resp, start, stop)
```

```
[6]: activpal_df.plot(y=["pal_accX", "pal_accY", "pal_accZ"], title='Normalized')
```

```
[6]: <matplotlib.axes._subplots.AxesSubplot at 0x7f7ad34f2b70>
```

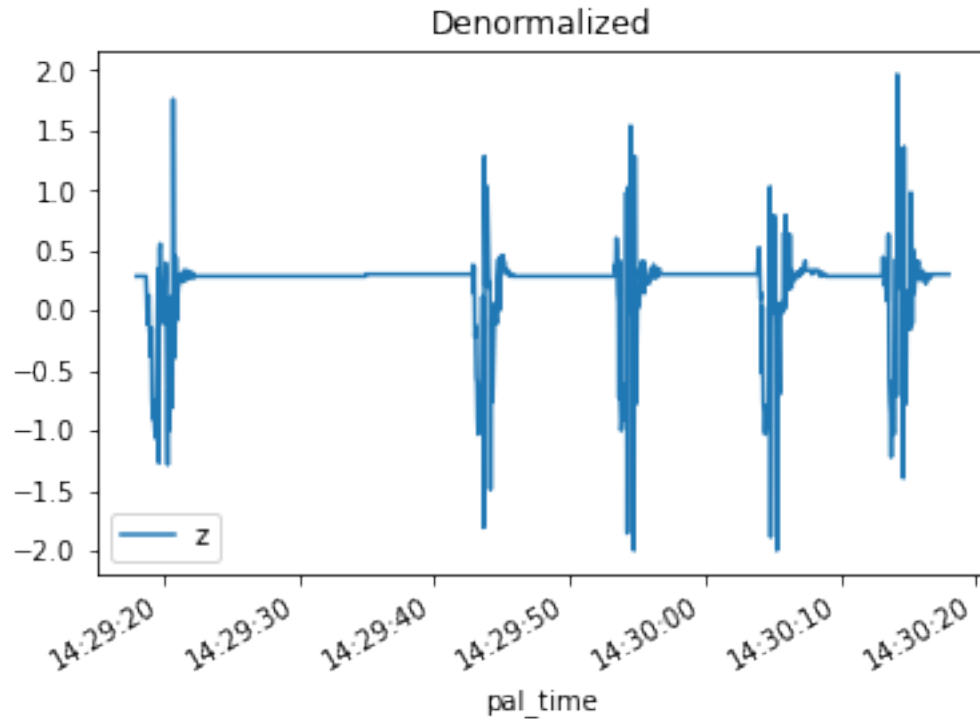


```
[7]: def convert_value_to_g(value):
      return (value - 127) / 63
```

```
[8]: activpal_df['x'] = convert_value_to_g(activpal_df['pal_accX'])
      activpal_df['y'] = convert_value_to_g(activpal_df['pal_accY'])
      activpal_df['z'] = convert_value_to_g(activpal_df['pal_accZ'])
```

```
[9]: activpal_df.plot(y=[ "z"], title='Denormalized')
```

```
[9]: <matplotlib.axes._subplots.AxesSubplot at 0x7f7ad2cab438>
```



```
[10]: activpal_15 = pandas_helper.read_csv_activpal1_15(resp)
```

```
[11]: activpal_15_sliced = activpal_15[( activpal_15.index >= activpal_df.index.
↪min()) & ( activpal_15.index <= activpal_df.index.max())]
```

```
[12]: activpal_15.head(50)
```

```
[12]:
```

	pal_diceFace	pal_avgPitch	pal_avgRoll	pal_avgAccX	\
pal_time					
2019-09-16 12:45:07	5	26	180,0	96	
2019-09-16 12:45:15	5	0	-174,0	128	
2019-09-16 12:45:30	5	20	-176,0	103	
2019-09-16 12:45:45	5	-10	159,0	139	
2019-09-16 12:46:00	1	61	49,0	109	
2019-09-16 12:46:15	2	-8	-7,0	136	
2019-09-16 12:46:30	2	-8	-7,0	136	
2019-09-16 12:46:45	2	-8	-7,0	136	
2019-09-16 12:47:00	2	-8	-7,0	136	
2019-09-16 12:47:15	2	-8	-7,0	136	
2019-09-16 12:47:30	2	-8	-7,0	136	
2019-09-16 12:47:45	2	-8	-7,0	136	
2019-09-16 12:48:00	2	-8	-7,0	136	
2019-09-16 12:48:15	2	-8	-7,0	136	

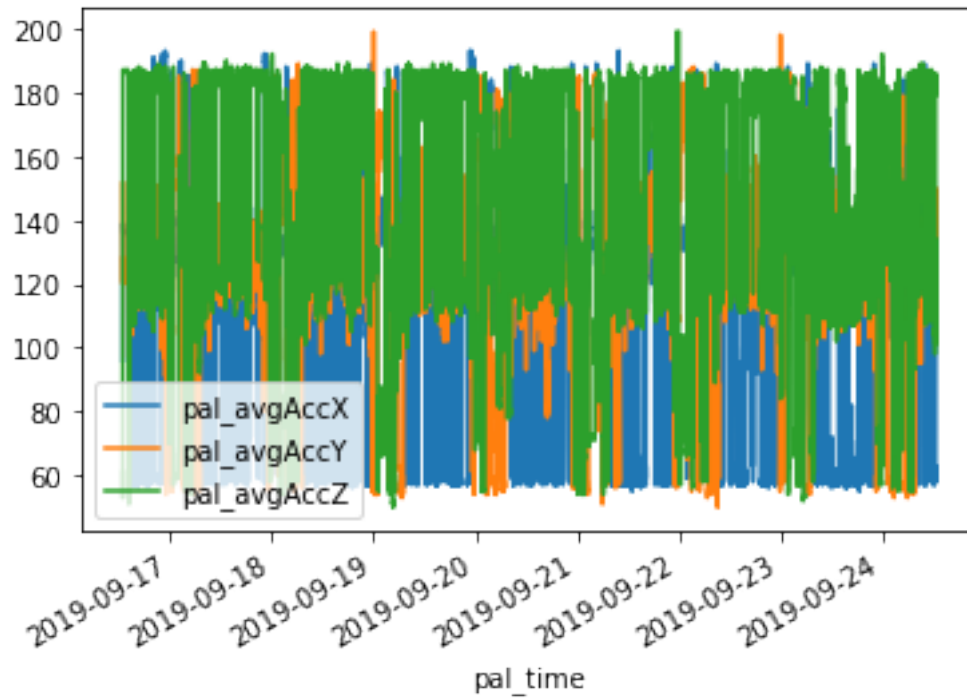
2019-09-16 12:48:30	2	-8	-7,0	136
2019-09-16 12:48:45	2	-8	-7,0	136
2019-09-16 12:49:00	2	-8	-7,0	136
2019-09-16 12:49:15	2	-8	-7,0	136
2019-09-16 12:49:30	2	-8	-7,0	136
2019-09-16 12:49:45	2	-8	-7,0	136
2019-09-16 12:50:00	2	-8	-7,0	136
2019-09-16 12:50:15	2	-8	-7,0	136
2019-09-16 12:50:30	2	-8	-7,0	136
2019-09-16 12:50:45	2	-8	-7,0	136
2019-09-16 12:51:00	2	-8	-7,0	136
2019-09-16 12:51:15	2	-8	-7,0	136
2019-09-16 12:51:30	2	-8	-7,0	136
2019-09-16 12:51:45	2	-8	-7,0	136
2019-09-16 12:52:00	2	-8	-7,0	136
2019-09-16 12:52:15	2	-8	-7,0	136
2019-09-16 12:52:30	2	-8	-7,0	136
2019-09-16 12:52:45	2	-8	-7,0	136
2019-09-16 12:53:00	2	-8	-7,0	136
2019-09-16 12:53:15	2	-8	-7,0	136
2019-09-16 12:53:30	2	-8	-7,0	136
2019-09-16 12:53:45	2	-8	-7,0	136
2019-09-16 12:54:00	2	-8	-7,0	136
2019-09-16 12:54:15	2	-8	-7,0	136
2019-09-16 12:54:30	2	-8	-7,0	136
2019-09-16 12:54:45	2	-8	-7,0	136
2019-09-16 12:55:00	2	-8	-7,0	136
2019-09-16 12:55:15	2	-8	-7,0	136
2019-09-16 12:55:30	2	-8	-7,0	136
2019-09-16 12:55:45	2	-8	-7,0	136
2019-09-16 12:56:00	2	-8	-7,0	136
2019-09-16 12:56:15	2	-8	-7,0	136
2019-09-16 12:56:30	2	-8	-7,0	136
2019-09-16 12:56:45	2	-8	-7,0	136
2019-09-16 12:57:00	2	-8	-7,0	136
2019-09-16 12:57:15	2	-8	-7,0	136

pal_time	pal_avgAccY	pal_avgAccZ	pal_avgAccelVolume
2019-09-16 12:45:07	128	61	2563
2019-09-16 12:45:15	120	53	3530
2019-09-16 12:45:30	123	59	4230
2019-09-16 12:45:45	152	67	3381
2019-09-16 12:46:00	136	135	3896
2019-09-16 12:46:15	121	187	0
2019-09-16 12:46:30	121	187	0
2019-09-16 12:46:45	121	187	0

2019-09-16 12:47:00	121	187	0
2019-09-16 12:47:15	121	187	0
2019-09-16 12:47:30	121	187	0
2019-09-16 12:47:45	121	187	0
2019-09-16 12:48:00	121	187	0
2019-09-16 12:48:15	121	187	0
2019-09-16 12:48:30	121	187	0
2019-09-16 12:48:45	121	187	0
2019-09-16 12:49:00	121	187	0
2019-09-16 12:49:15	121	187	0
2019-09-16 12:49:30	121	187	0
2019-09-16 12:49:45	121	187	0
2019-09-16 12:50:00	121	187	0
2019-09-16 12:50:15	121	187	0
2019-09-16 12:50:30	121	187	0
2019-09-16 12:50:45	121	187	0
2019-09-16 12:51:00	121	187	0
2019-09-16 12:51:15	121	187	0
2019-09-16 12:51:30	121	187	0
2019-09-16 12:51:45	121	187	0
2019-09-16 12:52:00	121	187	0
2019-09-16 12:52:15	121	187	0
2019-09-16 12:52:30	121	187	0
2019-09-16 12:52:45	121	187	0
2019-09-16 12:53:00	121	187	0
2019-09-16 12:53:15	121	187	0
2019-09-16 12:53:30	121	187	0
2019-09-16 12:53:45	121	187	0
2019-09-16 12:54:00	121	187	0
2019-09-16 12:54:15	121	187	0
2019-09-16 12:54:30	121	187	0
2019-09-16 12:54:45	121	187	0
2019-09-16 12:55:00	121	187	0
2019-09-16 12:55:15	121	187	0
2019-09-16 12:55:30	121	187	0
2019-09-16 12:55:45	121	187	0
2019-09-16 12:56:00	121	187	0
2019-09-16 12:56:15	121	187	0
2019-09-16 12:56:30	121	187	0
2019-09-16 12:56:45	121	187	0
2019-09-16 12:57:00	121	187	0
2019-09-16 12:57:15	121	187	0

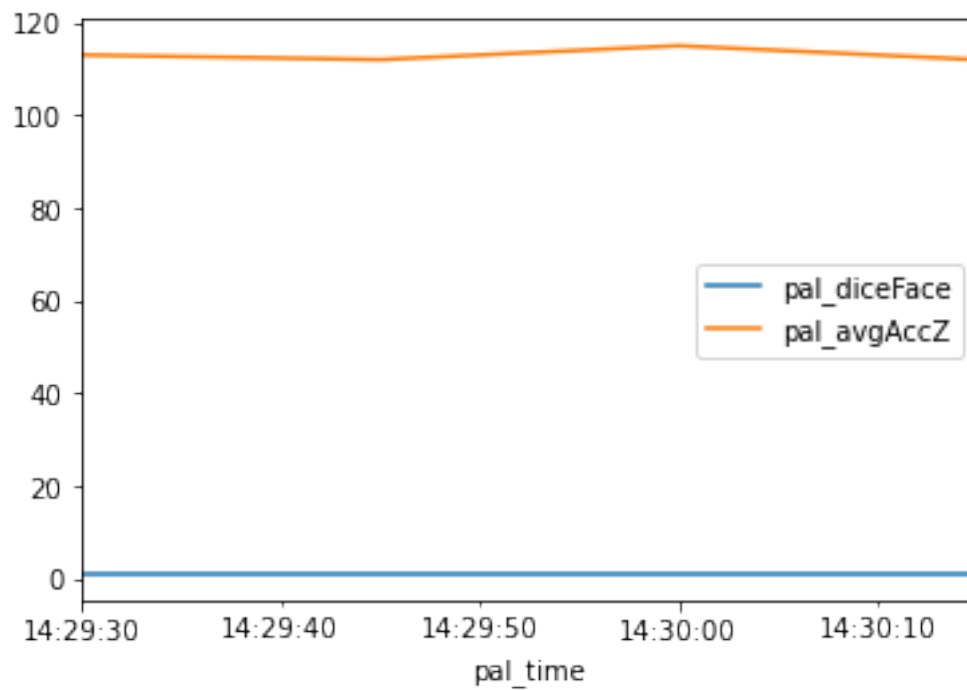
```
[13]: activpal_15.plot(y=["pal_avgAccX", "pal_avgAccY", "pal_avgAccZ"])
```

```
[13]: <matplotlib.axes._subplots.AxesSubplot at 0x7f7acd680c18>
```



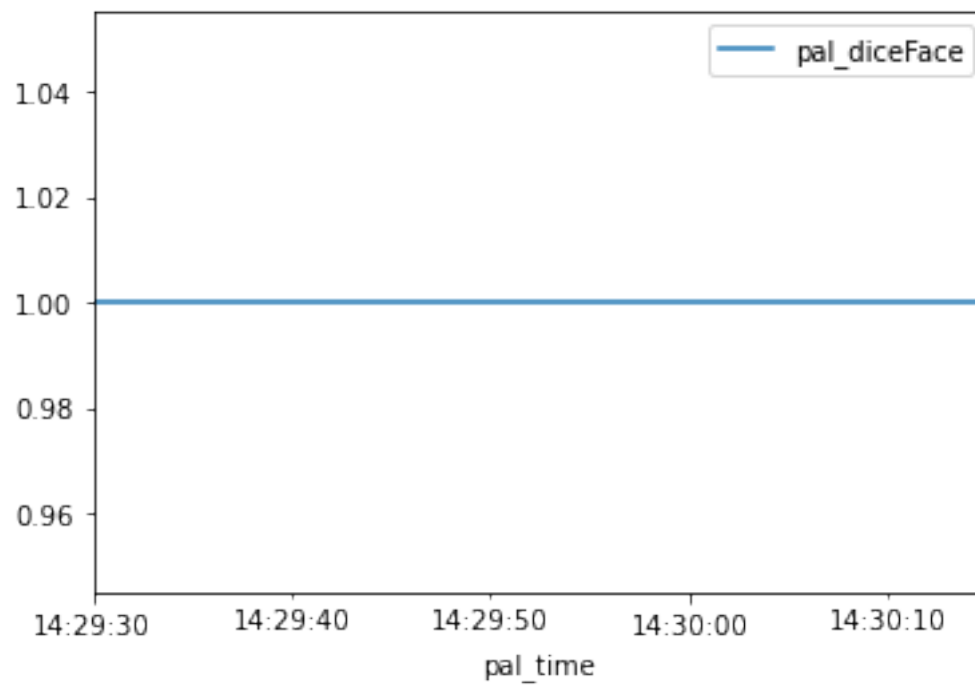
```
[14]: activpal_15_sliced.plot(y=["pal_diceFace", "pal_avgAccZ"])
```

```
[14]: <matplotlib.axes._subplots.AxesSubplot at 0x7f7ace776128>
```



```
[15]: activpal_15_sliced.plot(y=["pal_diceFace"])
```

```
[15]: <matplotlib.axes._subplots.AxesSubplot at 0x7f7ace68a208>
```



```
[ ]:
```