81_-_Working_with_Signal

March 22, 2020

[1]:
```
from asammdf import Signal
import numpy as np
```

[2]:
```
# create 3 Signal objects with different time stamps

# unit8 with 100ms time raster
timestamps = np.array([0.1 * t for t in range(5)], dtype=np.float32)
s_uint8 = Signal(samples=np.array([t for t in range(5)], dtype=np.uint8),
                 timestamps=timestamps,
                 name='Uint8_Signal',
                 unit='u1')
```

[3]:
```
s_uint8.plot()
```

```
WARNING:root:Signal plotting requires pyqtgraph or matplotlib


      ␣
↪---------------------------------------------------------------------------

       Exception                                 Traceback (most recent call␣
↪last)

       <ipython-input-3-5d1c358dd80f> in <module>
   ----> 1 s_uint8.plot()


       /projects/asammdf/asammdf/signal.py in plot(self, validate)
       167             from .gui.plot import plot
       168
   --> 169             plot(self, validate=True)
       170             return
       171


       /projects/asammdf/asammdf/gui/plot.py in plot(signals, title, validate)
        58     else:
```

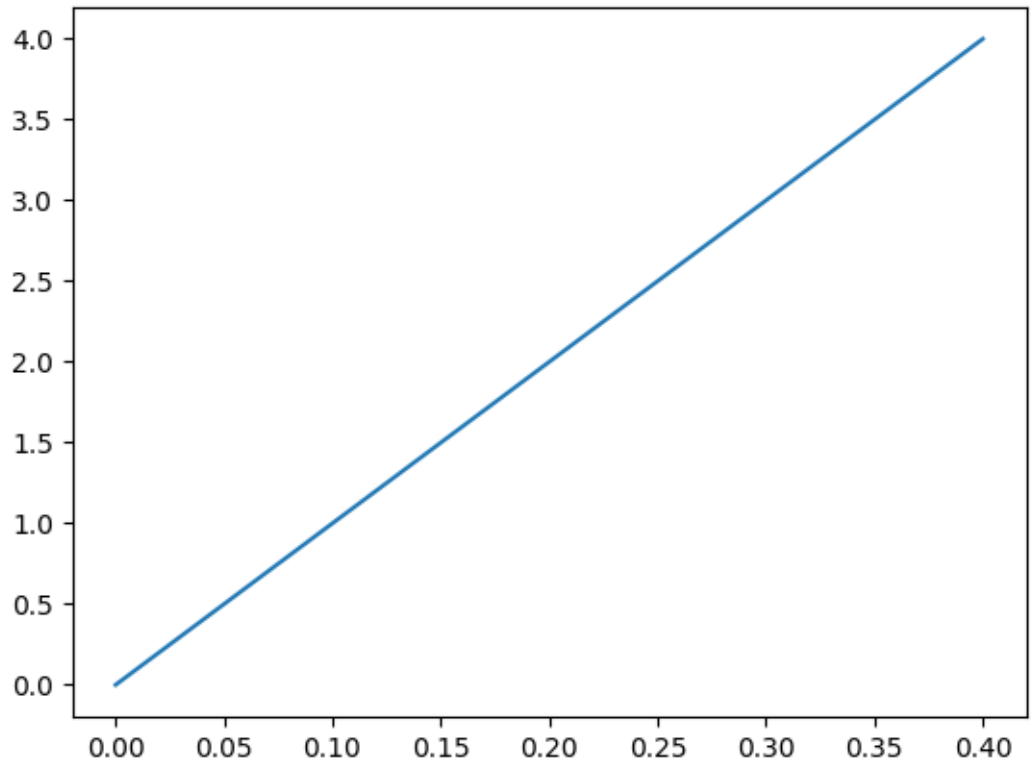
```
        59         logging.warning("Signal plotting requires pyqtgraph or␣
↪matplotlib")
   ---> 60         raise Exception("Signal plotting requires pyqtgraph or␣
↪matplotlib")

Exception: Signal plotting requires pyqtgraph or matplotlib
```

[4]:
```
import IPython.display as display
import matplotlib.pyplot as plt
import matplotlib as mpl
import numpy as np
import pandas as pd
import seaborn as sns
```

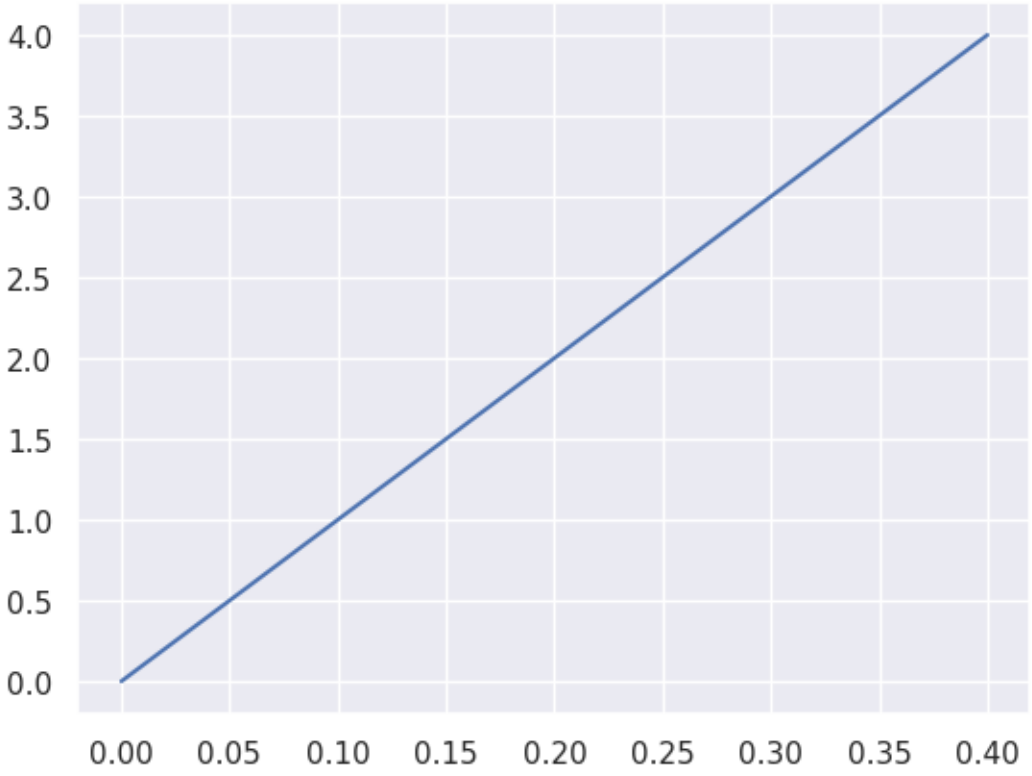
[5]:
```
mpl.rc_file_defaults()
plt.plot(s_uint8.timestamps, s_uint8.samples)
```

[5]:
```
[<matplotlib.lines.Line2D at 0x7f31bbcc9100>]
```



[6]:
```
mpl.rc_file_defaults()
sns.set()
plt.plot(s_uint8.timestamps, s_uint8.samples)
```

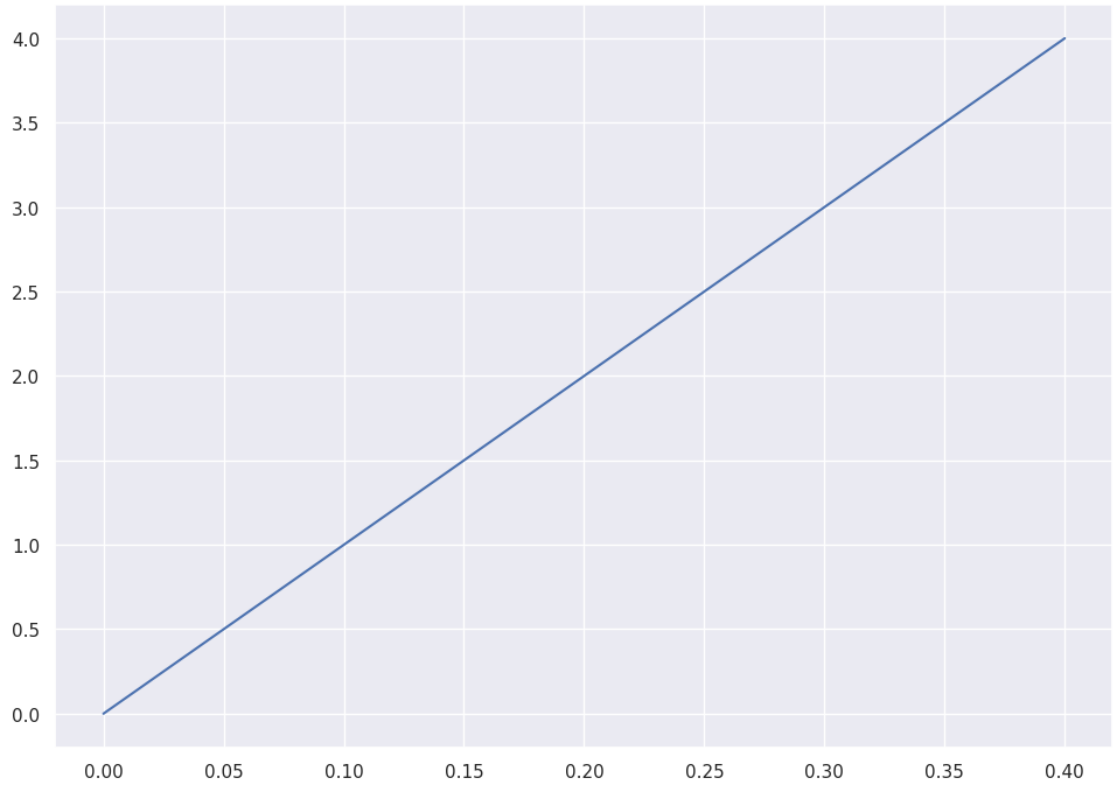
[6]: [<matplotlib.lines.Line2D at 0x7f31bb6088e0>]



[7]:
```
mpl.rc_file_defaults()
sns.set(
    rc={
        "figure.figsize": (11.69, 8.27), # A4
        "figure.facecolor": "w",
        "figure.edgecolor": "k",
        "axes.labelsize": 18,
        "axes.titlesize": 18,
    }
)

plt.plot(s_uint8.timestamps, s_uint8.samples)
```

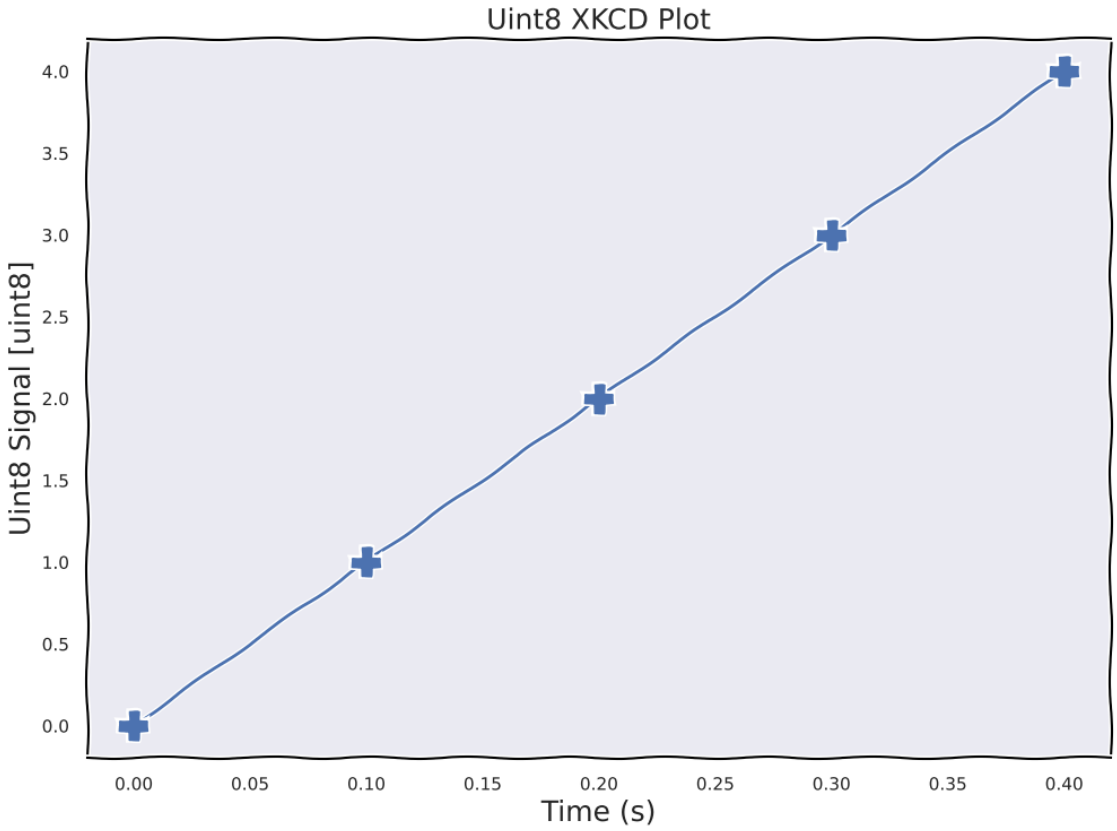
[7]: [<matplotlib.lines.Line2D at 0x7f31bb56d640>]



[8]:
```
mpl.rc_file_defaults()
sns.set(
    rc={
        "figure.figsize": (11.69, 8.27), # A4
        "figure.facecolor": "w",
        "figure.edgecolor": "k",
        "axes.labelsize": 18,
        "axes.titlesize": 18,
    }
)
with plt.xkcd():
    fig1 = plt.plot(s_uint8.timestamps, s_uint8.samples, marker="P",␣
 ↪markersize=18)
    plt.xlabel("Time (s)")
    plt.ylabel("Uint8 Signal [uint8]")
    plt.title("Uint8 XKCD Plot")
```

```
WARNING:matplotlib.font_manager:findfont: Font family ['xkcd', 'xkcd Script',
'Humor Sans', 'Comic Neue', 'Comic Sans MS'] not found. Falling back to DejaVu
Sans.
WARNING:matplotlib.font_manager:findfont: Font family ['xkcd', 'xkcd Script',
'Humor Sans', 'Comic Neue', 'Comic Sans MS'] not found. Falling back to DejaVu
```

Sans.


Uint8 XKCD Plot
Uint8 Signal [uint8]
Time (s)
0.0
0.5
1.0
1.5
2.0
2.5
3.0
3.5
4.0
0.00
0.05
0.10
0.15
0.20
0.25
0.30
0.35
0.40