Dear Mehaboob Baasha,

I am writing to submit my report as part of my application for the Data Science Research internship, AI4SEE PRIVATE LIMITED. I am excited to apply for this opportunity and to share my findings with you.

Code:

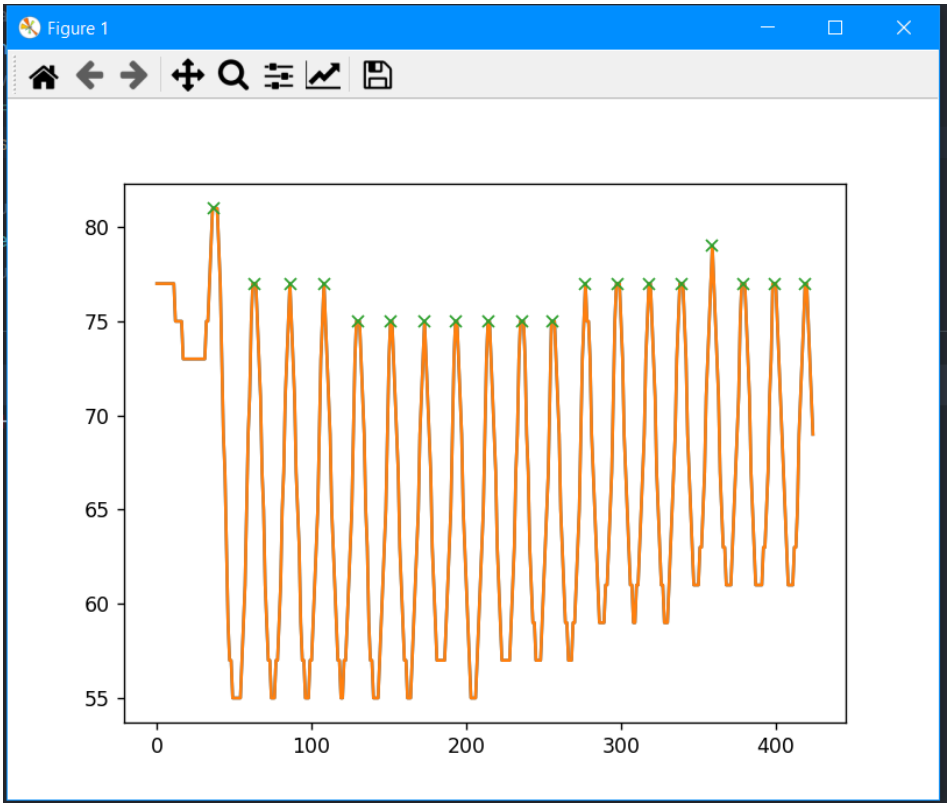
```
#importing required libraries
import numpy as np
import pandas as pd
import matplotlib.pyplot as plt

from scipy.signal import find_peaks
df = pd.read_csv(r'S:\CODING NOTES\PYTHON3.0\CSV files\data_file.csv')
print(df)
print(plt.plot(df))
waveform = df['data'].to_numpy()
# Find the peaks in the waveform
peaks, _ = find_peaks(waveform, prominence=0.5)
# Plot the waveform and the detected peaks
plt.plot(waveform)
plt.plot(peaks, waveform[peaks], "x")
plt.show()
# Count the number of peaks
num_peaks = len(peaks)
# Print the number of peaks
print("Number of Positive  peaks:", num_peaks)
```

This program reads in a CSV file, imports the necessary libraries (NumPy, Pandas, Scipy, and Matplotlib), then shows the data as a waveform. Then, based on the prominence parameter value of 0.5, it employs the find_peaks function from the SciPy library to identify the positive peaks in the waveform. The waveform is then plotted by the code, with an "x" indicating any identified positive peaks. The code then totals the positive peaks and outputs the result.

Overall, this code shows how to use Scipy's find_peaks function to find peaks in a waveform.

Output Graph:




I feel like there is no need to preprocess the data. As it is a 1D array and has no missing or noisy data

I believe that my findings will be valuable to your organization and that my skills and experience make me a strong candidate for the internship program.

Thank you for considering my application, and I look forward to hearing from you soon.

Sincerely,

MV Sujan Kumar