```
import numpy as np

def crossDetc(x,f,g):
    crossUP=[]
    crossDOWN=[]
    idx = np.argwhere(np.diff(np.sign(f - g))).flatten()
    for i in idx[5:]:
        if(g[i - 1] > f[i - 1]):
            crossUP.append(i)
        else :
            crossDOWN.append(i)

    plt.plot(x,f)
    plt.plot(x,g)
    plt.plot(x[crossUP], f[crossUP], 'o')
    plt.plot(x[crossDOWN], f[crossDOWN], 'ro')

    plt.show()
```

```
crossDetc(ds['closeTime'].iloc[0:100],ds['closeSMA5'].iloc[0:100],ds['close'].iloc[0:100])
crossDetc(ds['closeTime'].iloc[0:100],ds['closeSMA7'].iloc[0:100],ds['close'].iloc[0:100])
crossDetc(ds['closeTime'].iloc[0:100],ds['closeSMA10'].iloc[0:100],ds['close'].iloc[0:100])
crossDetc(ds['closeTime'].iloc[0:100],ds['closeSMA14'].iloc[0:100],ds['close'].iloc[0:100])
crossDetc(ds['closeTime'].iloc[0:100],ds['closeSMA21'].iloc[0:100],ds['close'].iloc[0:100])
crossDetc(ds['closeTime'].iloc[0:100],ds['closeSMA25'].iloc[0:100],ds['close'].iloc[0:100])
crossDetc(ds['closeTime'].iloc[0:100],ds['closeSMA50'].iloc[0:100],ds['close'].iloc[0:100])
crossDetc(ds['closeTime'].iloc[0:100],ds['closeSMA100'].iloc[0:100],ds['close'].iloc[0:100])
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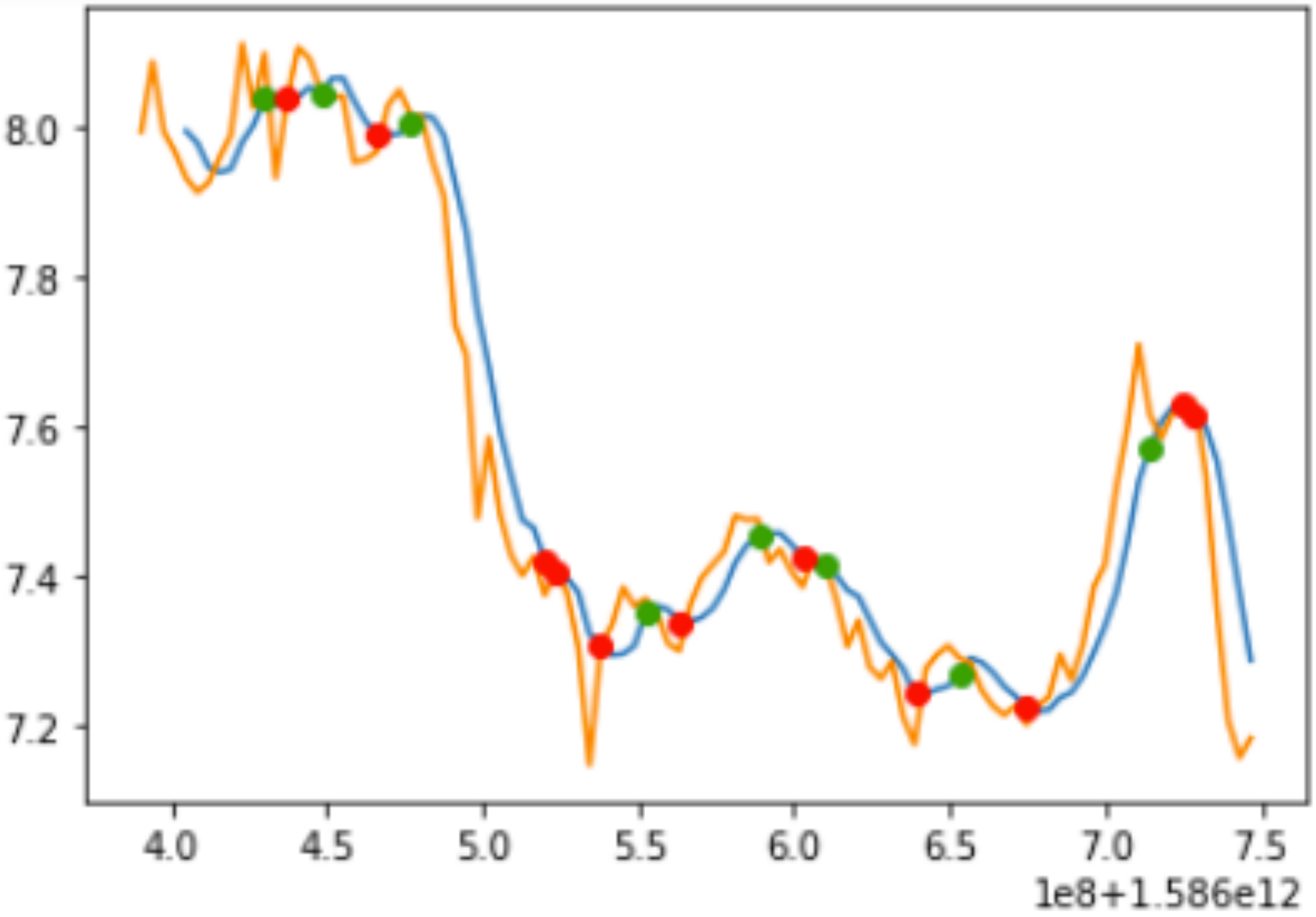
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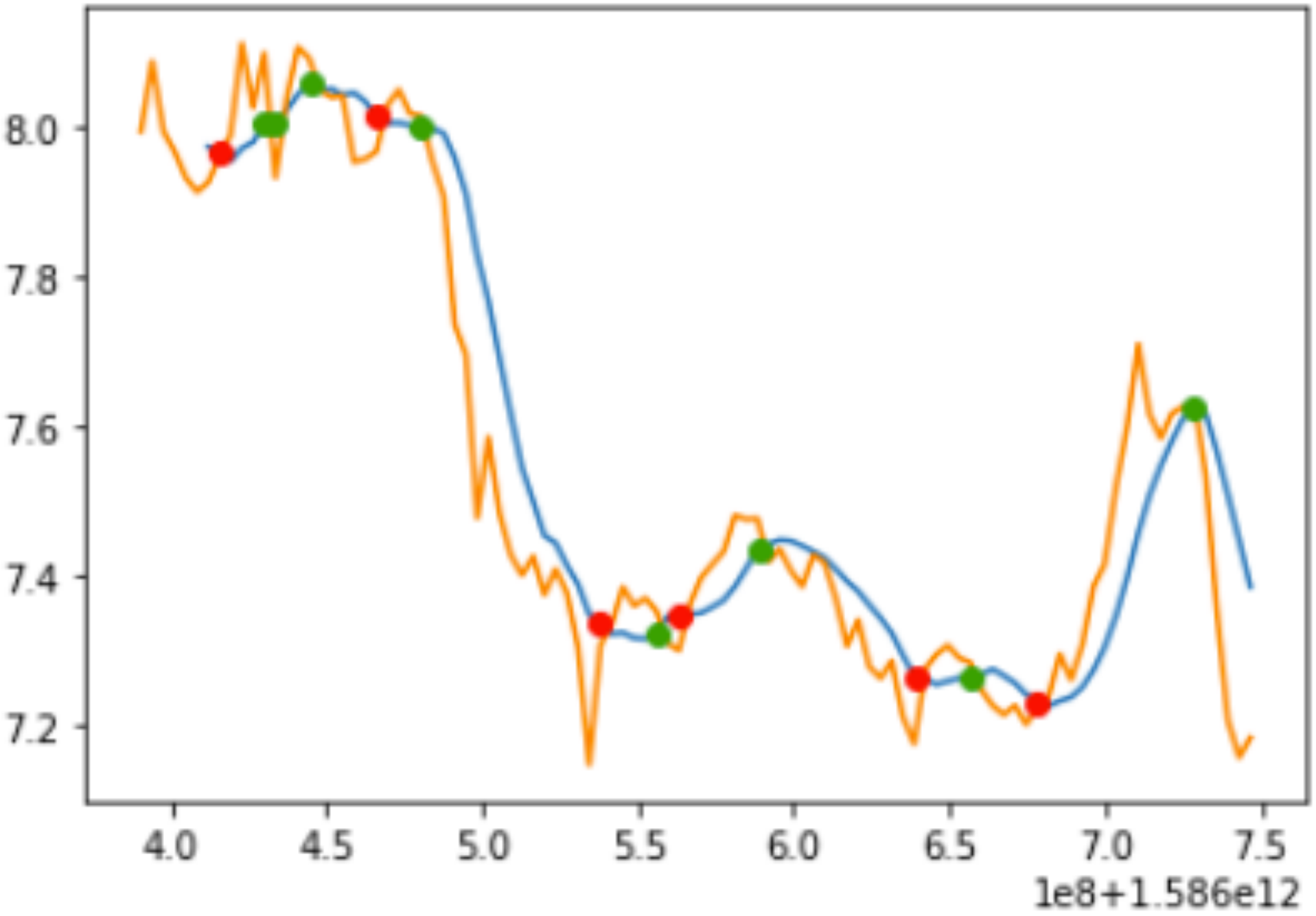
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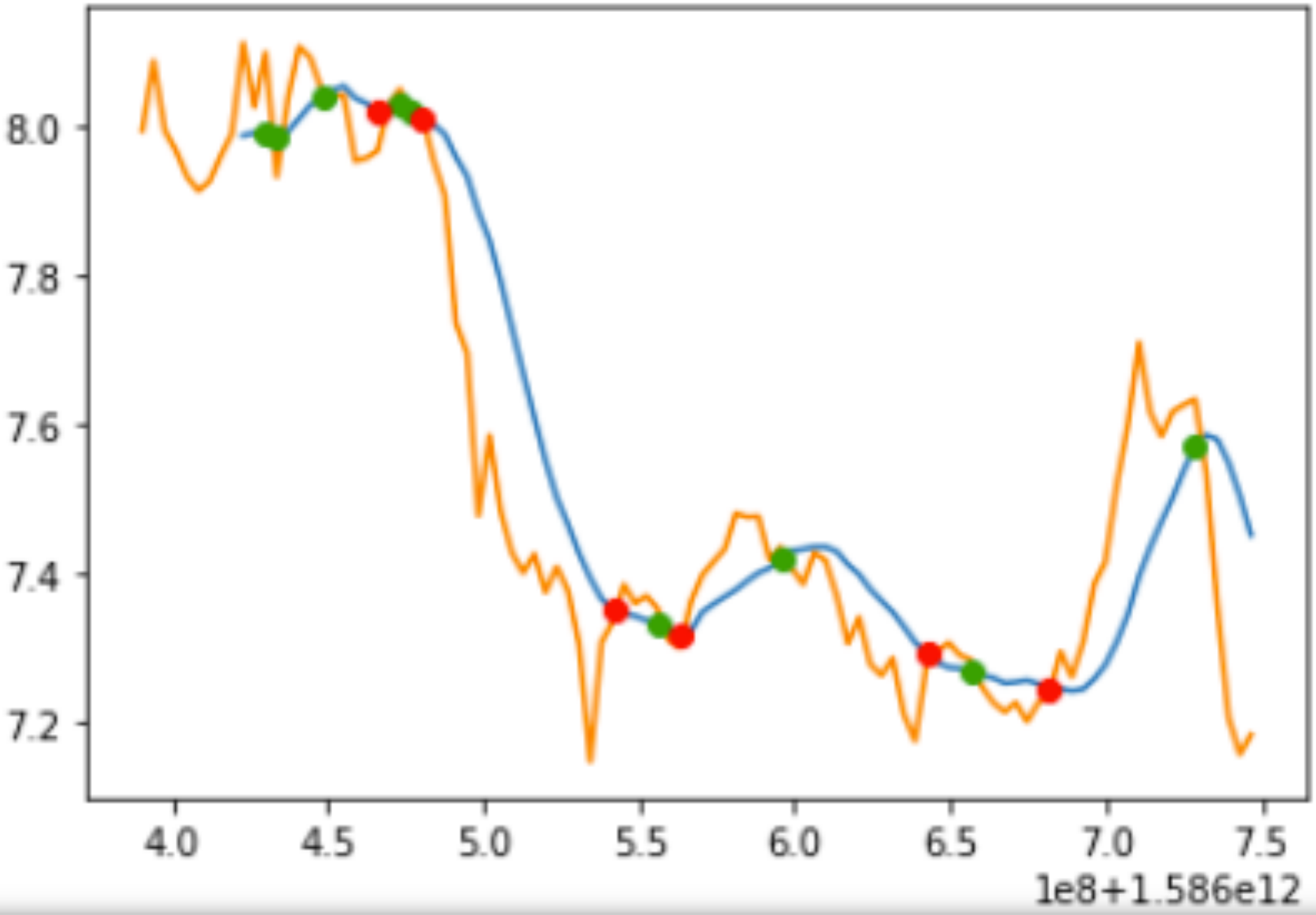
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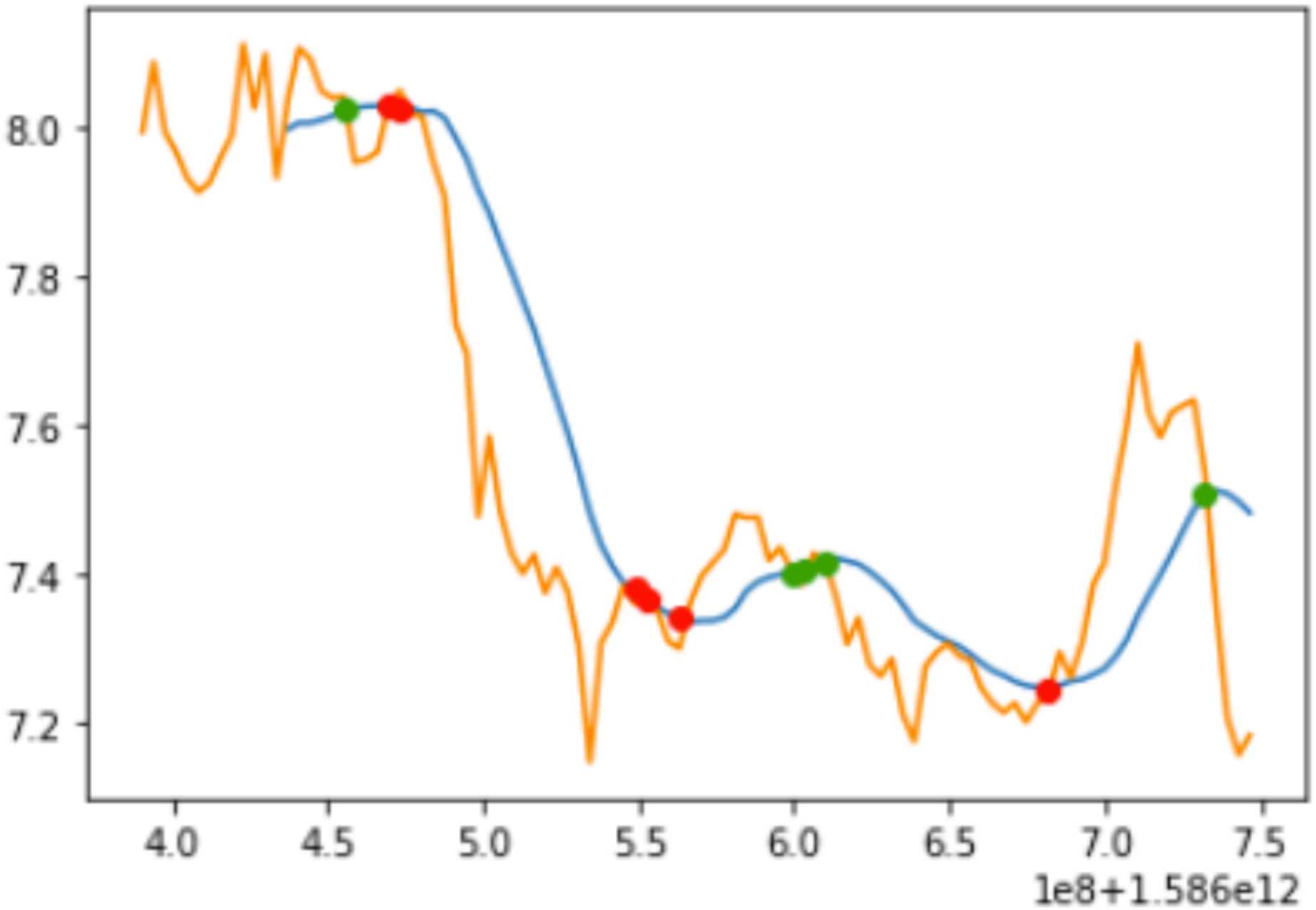
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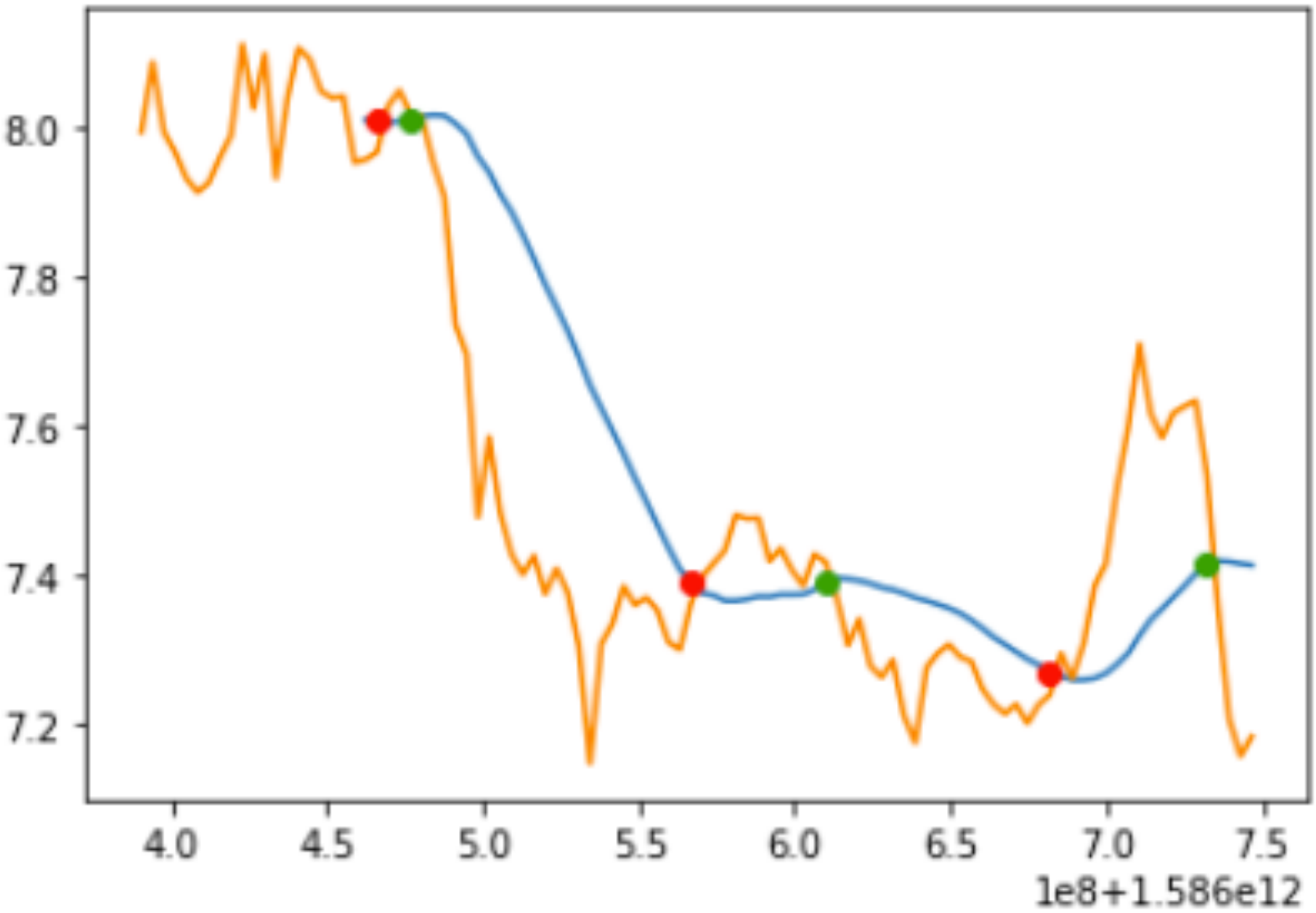
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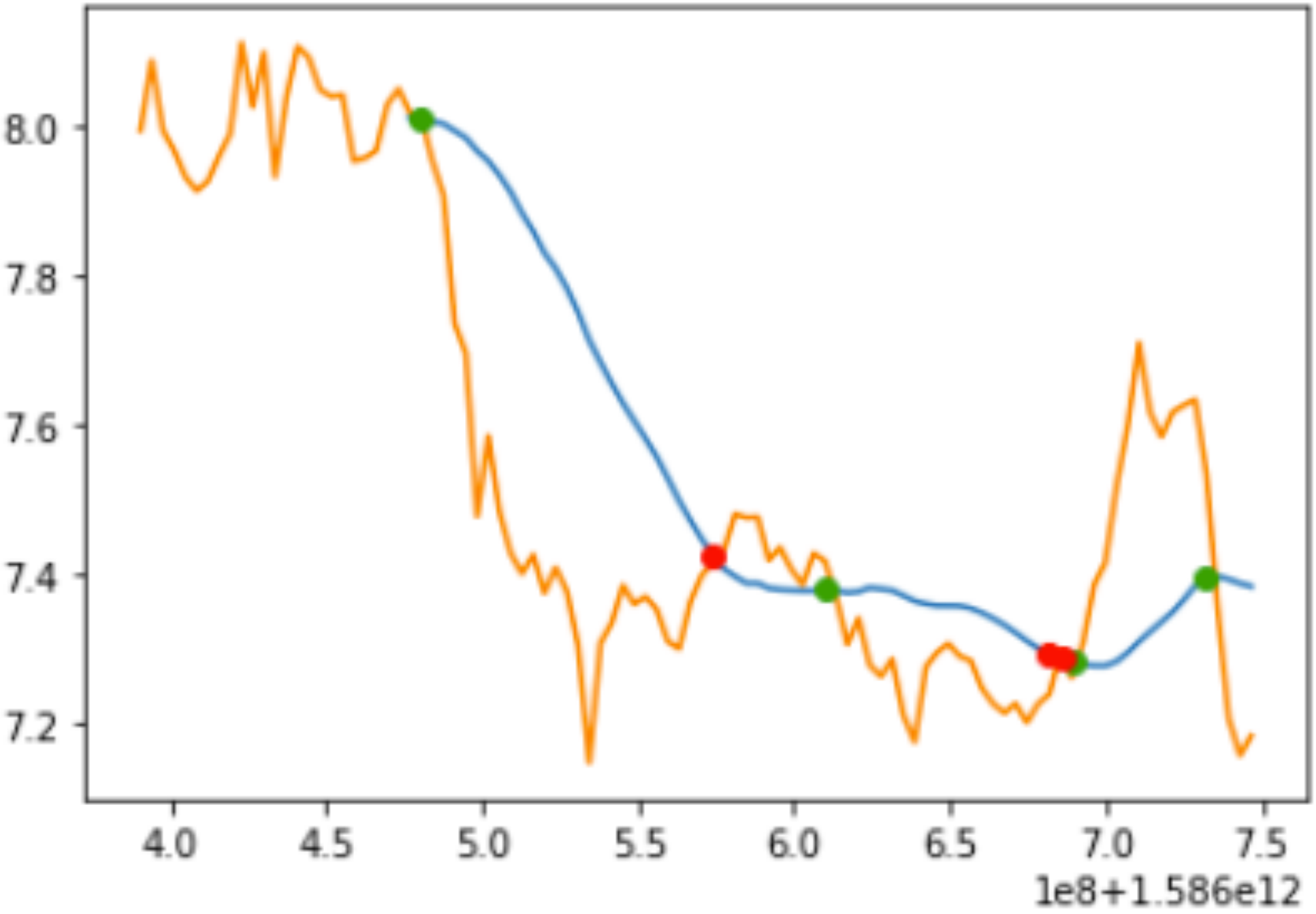
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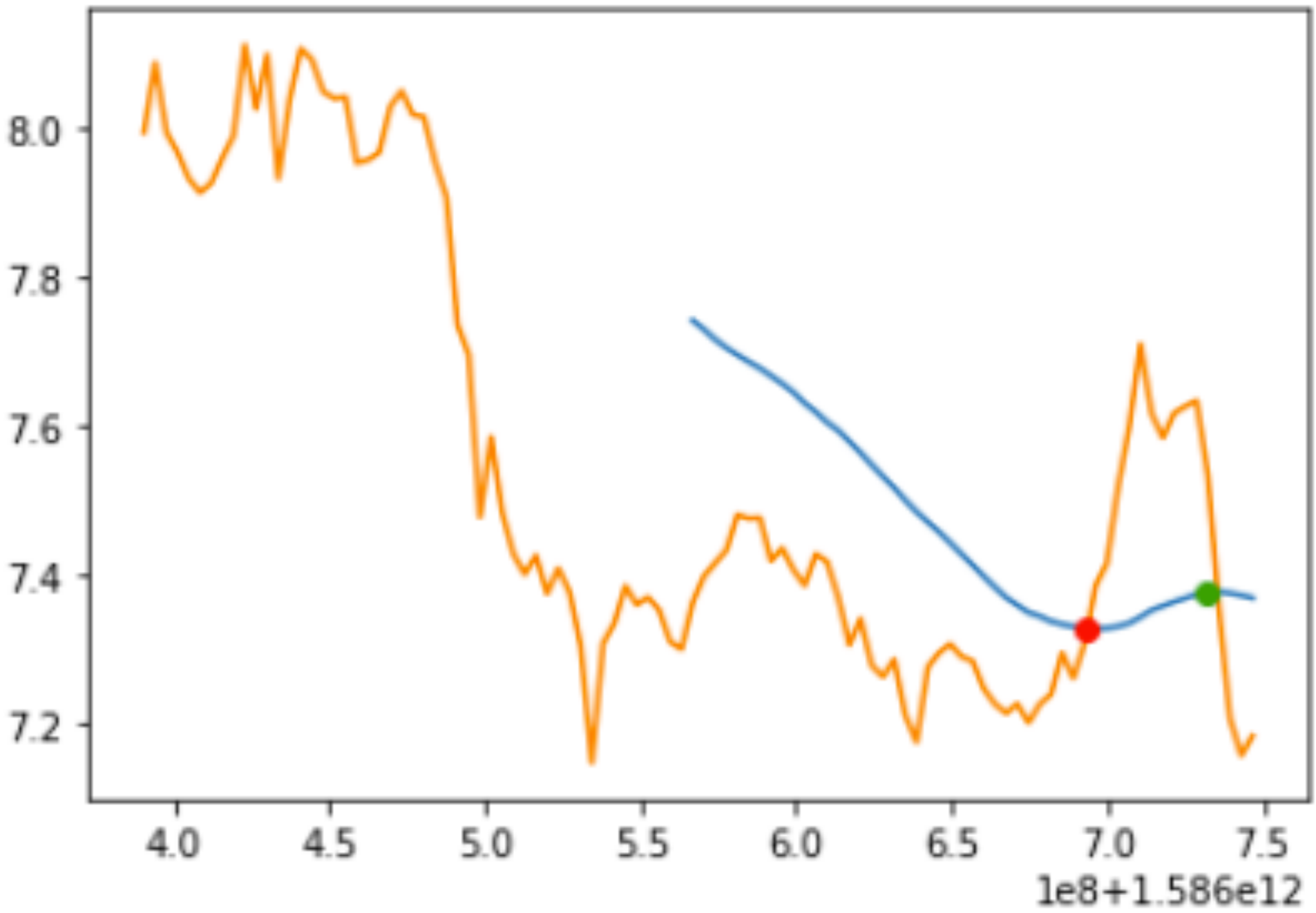
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```
crossDetc(ds['openTime'].iloc[0:100],ds['openSMA5'].iloc[0:100],ds['open'].iloc[0:100])
crossDetc(ds['openTime'].iloc[0:100],ds['openSMA7'].iloc[0:100],ds['open'].iloc[0:100])
crossDetc(ds['openTime'].iloc[0:100],ds['openSMA10'].iloc[0:100],ds['open'].iloc[0:100])
crossDetc(ds['openTime'].iloc[0:100],ds['openSMA14'].iloc[0:100],ds['open'].iloc[0:100])
crossDetc(ds['openTime'].iloc[0:100],ds['openSMA21'].iloc[0:100],ds['open'].iloc[0:100])
crossDetc(ds['openTime'].iloc[0:100],ds['openSMA25'].iloc[0:100],ds['open'].iloc[0:100])
crossDetc(ds['openTime'].iloc[0:100],ds['openSMA50'].iloc[0:100],ds['open'].iloc[0:100])
crossDetc(ds['openTime'].iloc[0:300],ds['openSMA100'].iloc[0:300],ds['open'].iloc[0:300])
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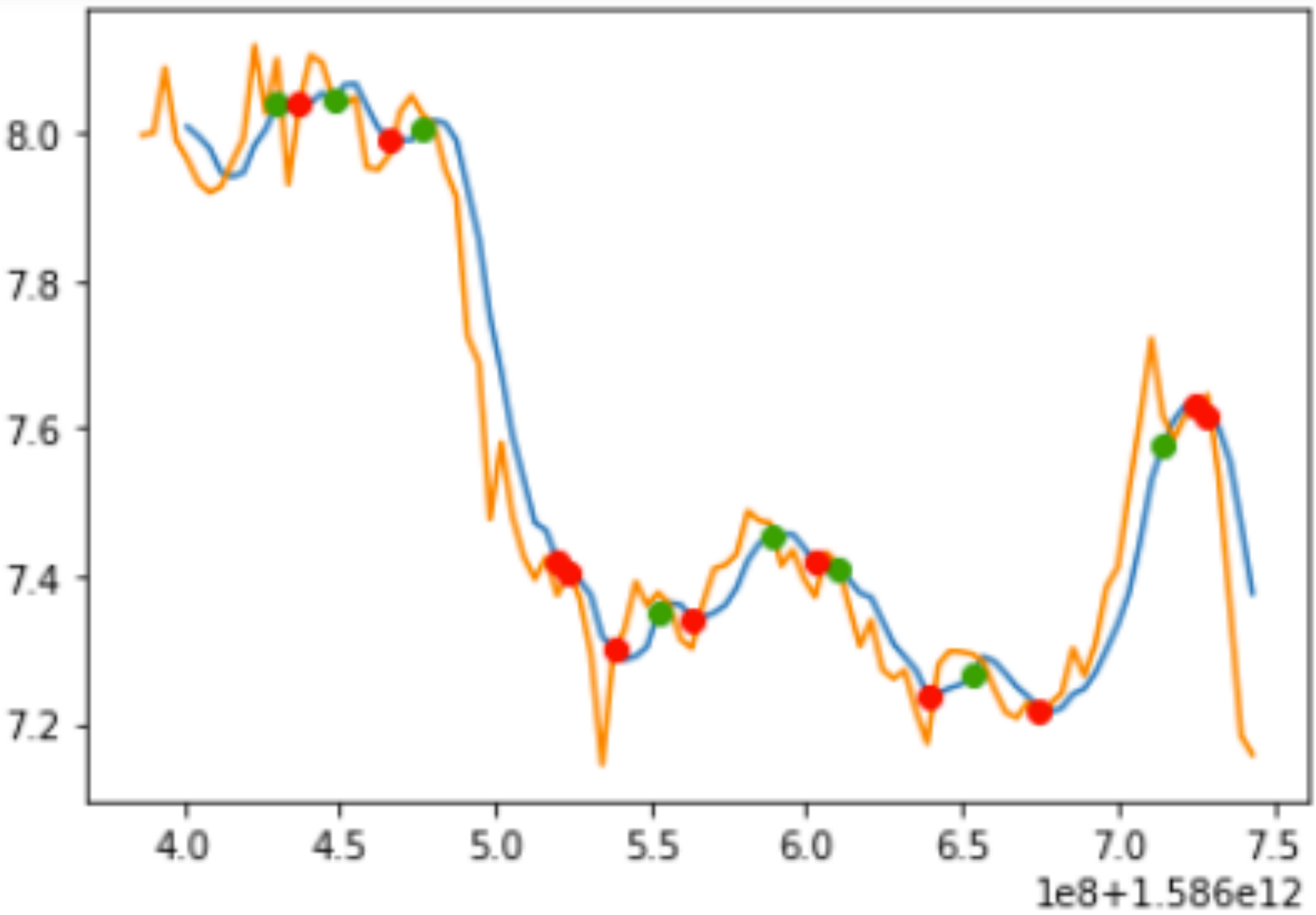
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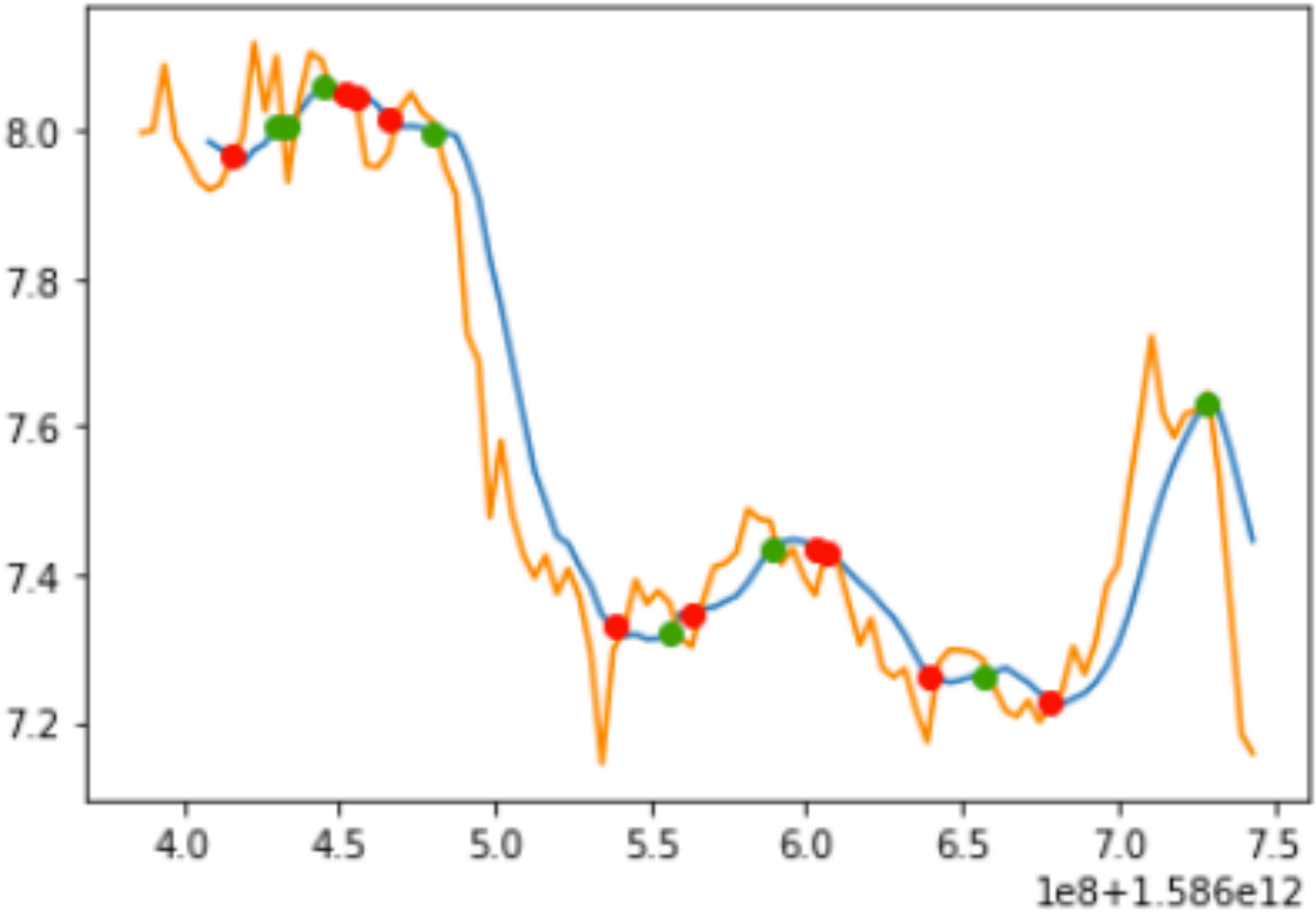
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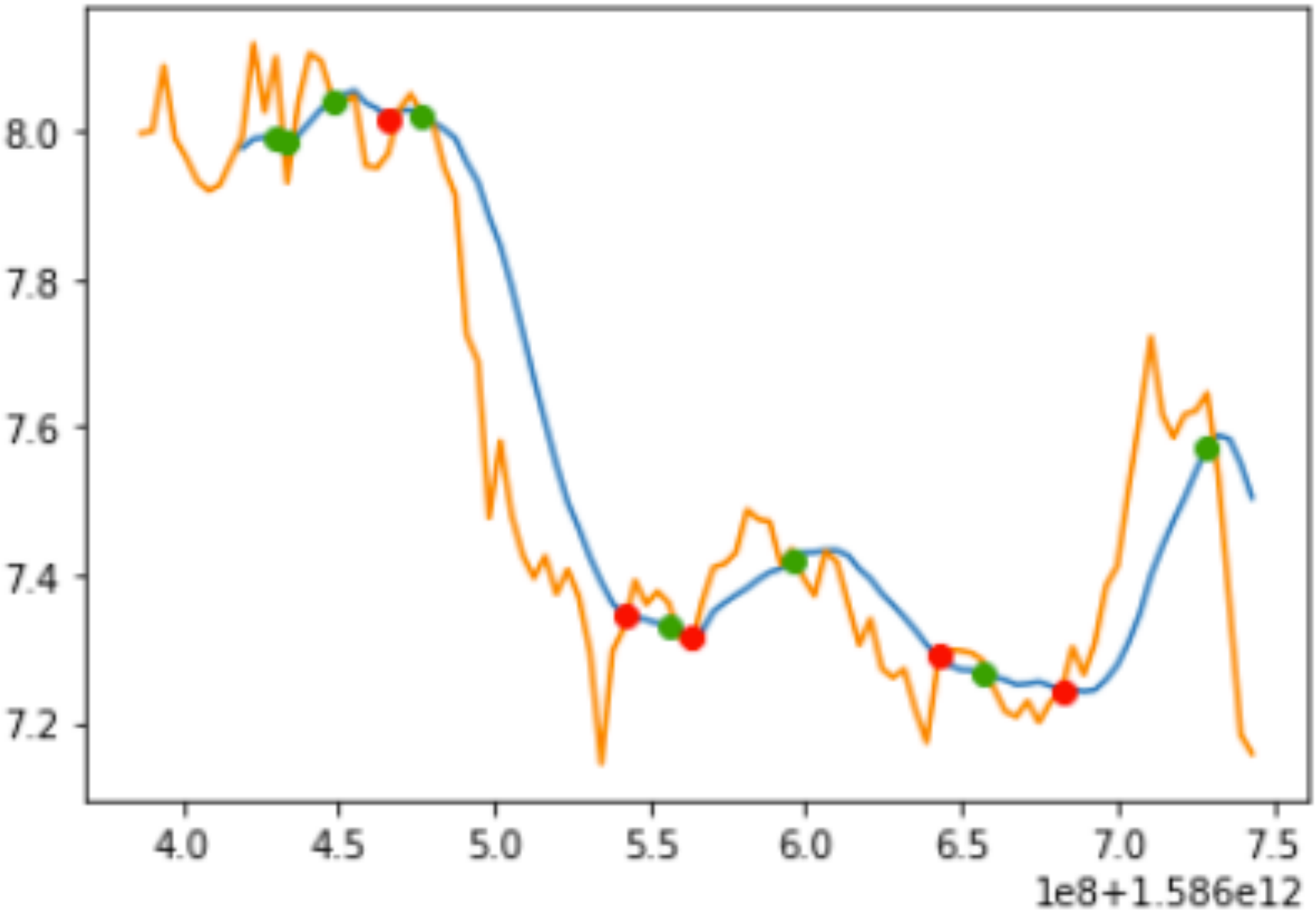
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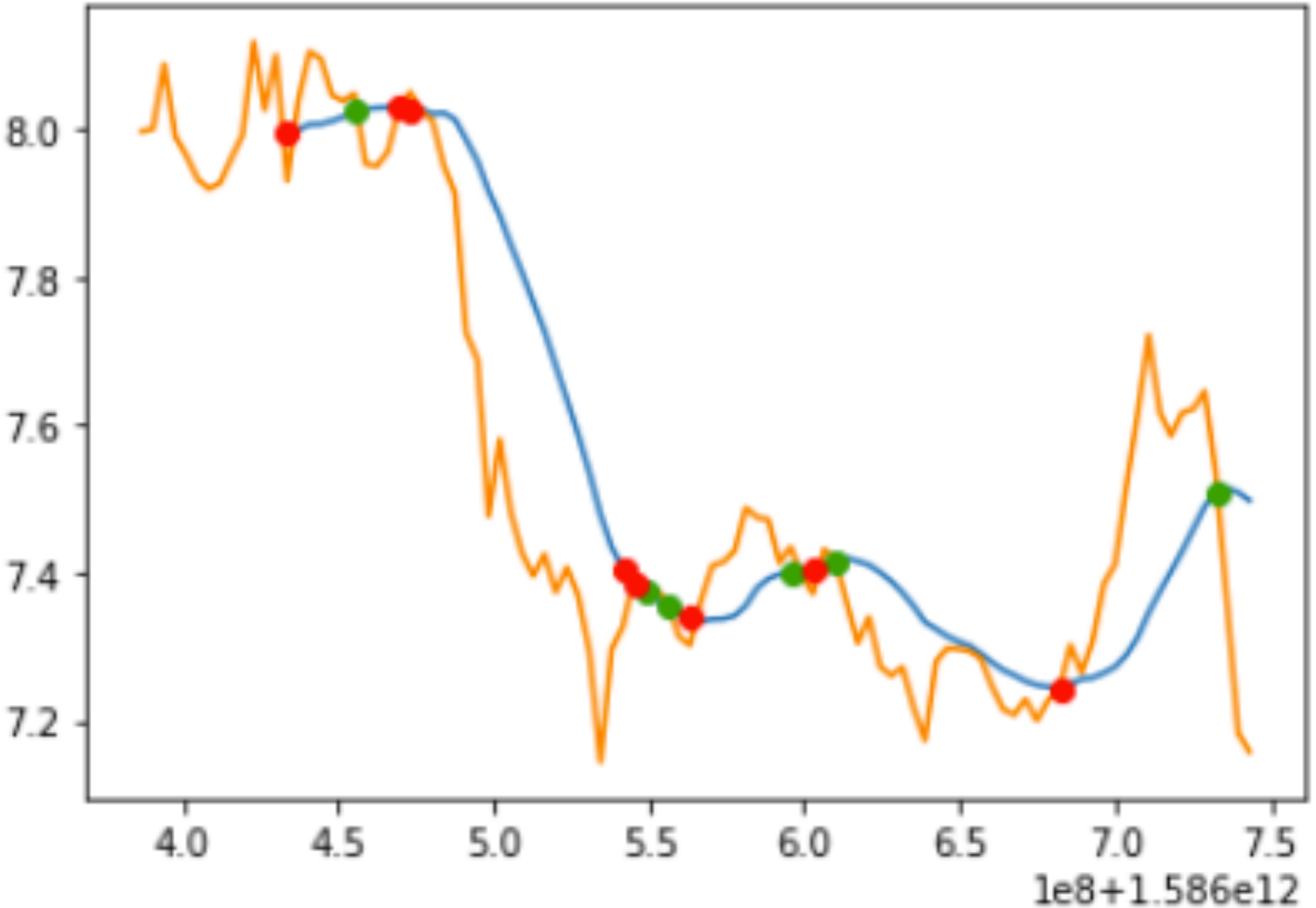
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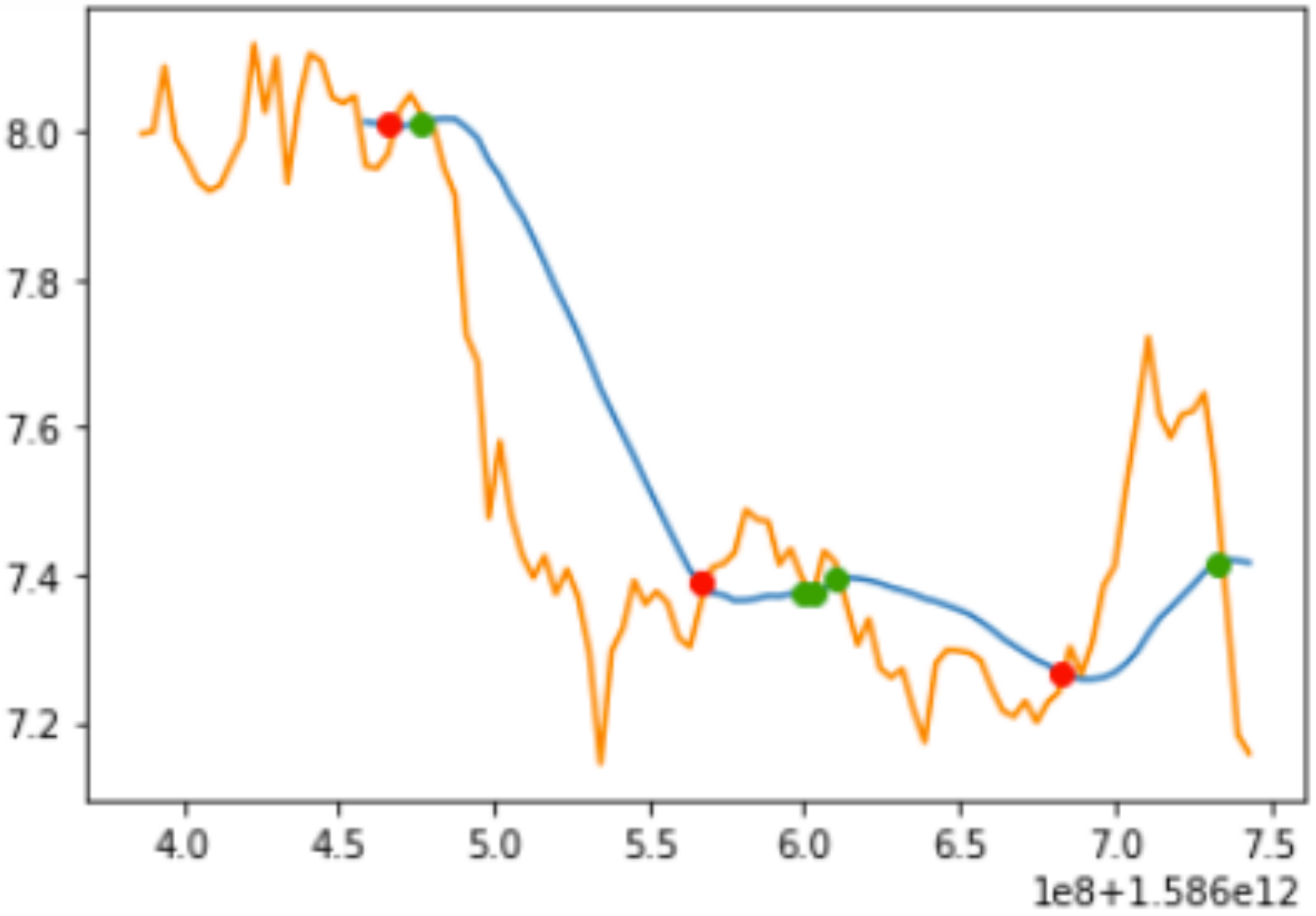
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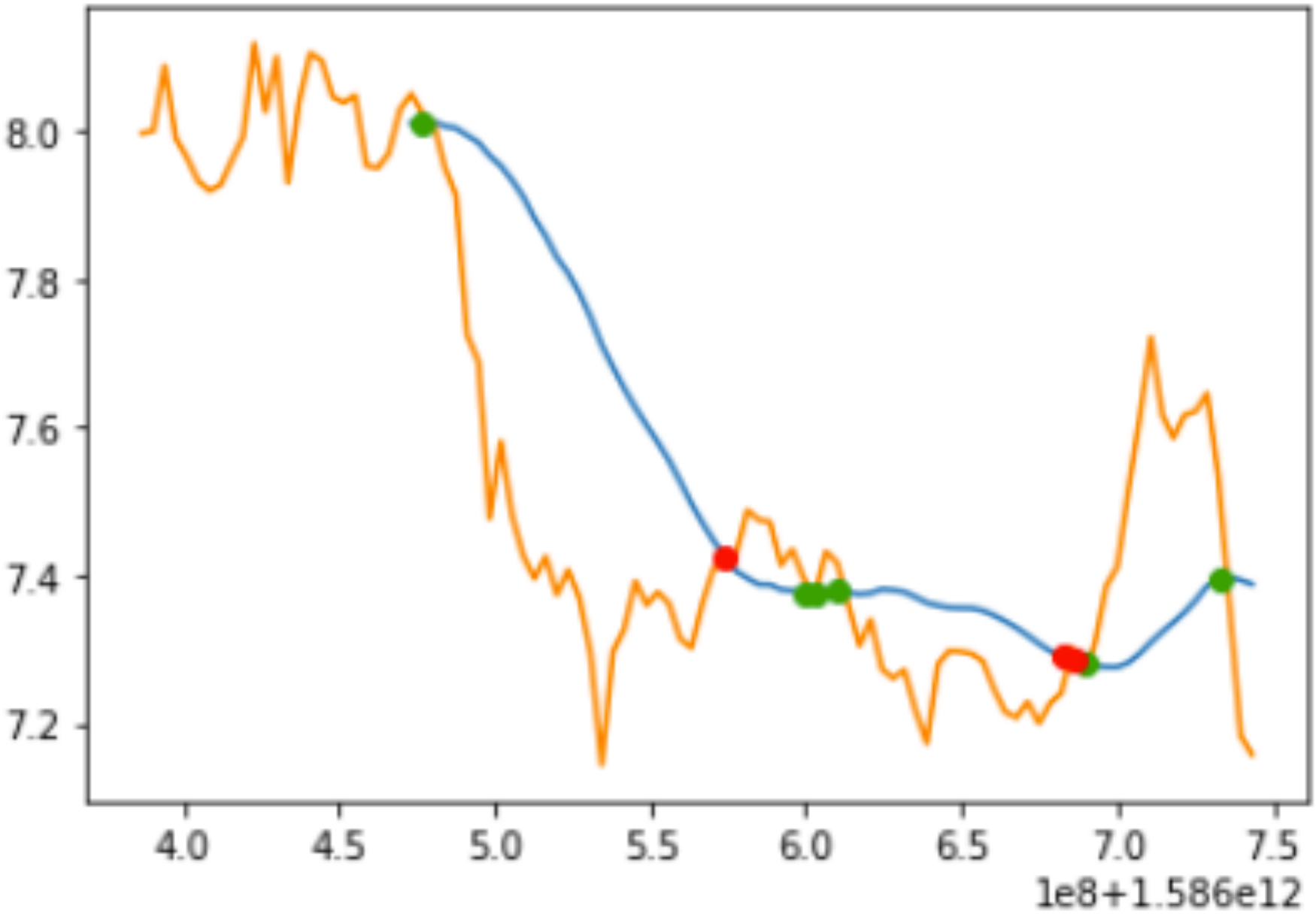
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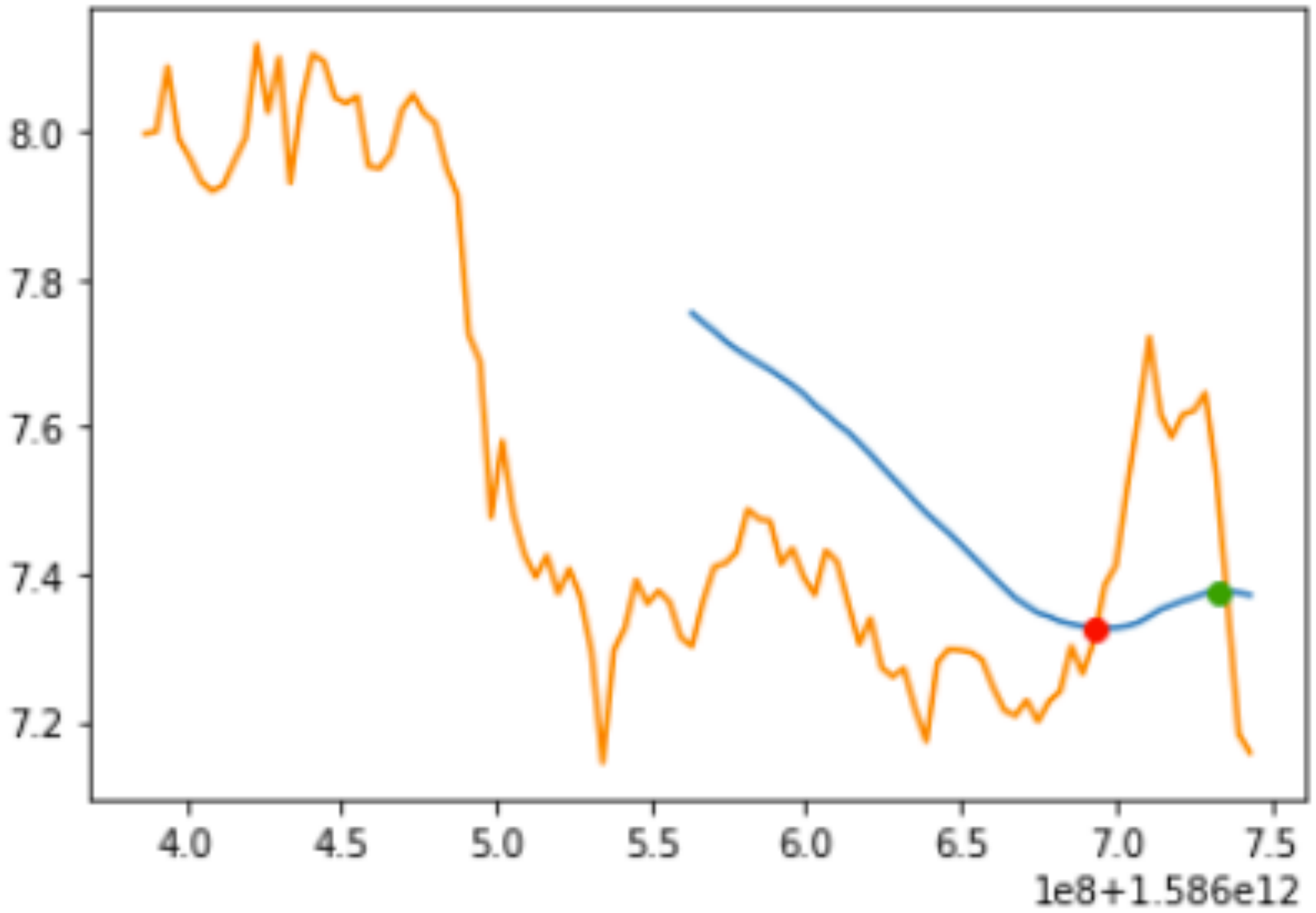
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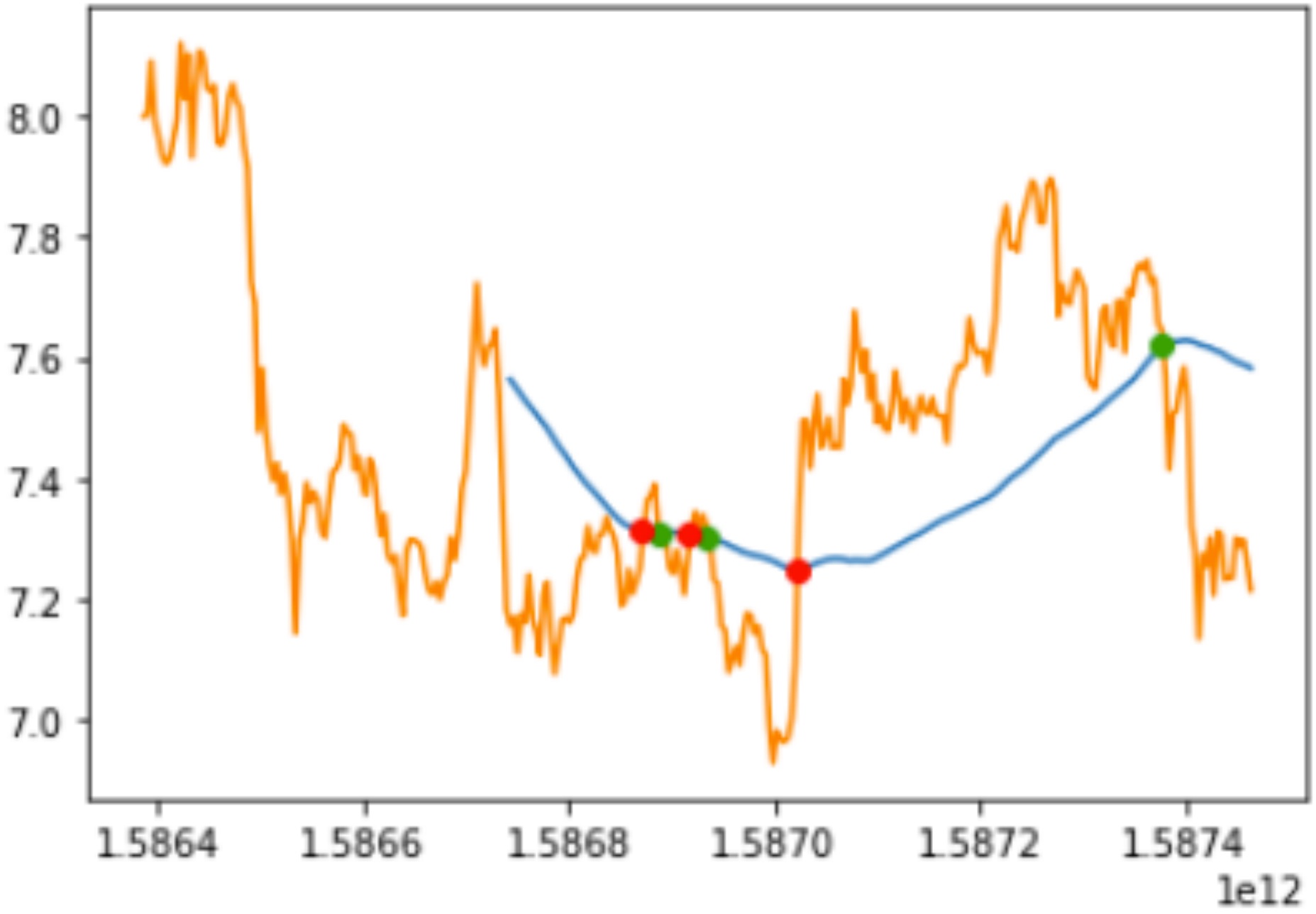
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1.5874
1e12

```
crossDetc(ds['openTime'].iloc[0:100],ds['highSMA5'].iloc[0:100],ds['high'].iloc[0:100])
crossDetc(ds['openTime'].iloc[0:100],ds['highSMA7'].iloc[0:100],ds['high'].iloc[0:100])
crossDetc(ds['openTime'].iloc[0:100],ds['highSMA10'].iloc[0:100],ds['high'].iloc[0:100])
crossDetc(ds['openTime'].iloc[0:100],ds['highSMA14'].iloc[0:100],ds['high'].iloc[0:100])
crossDetc(ds['openTime'].iloc[0:100],ds['highSMA21'].iloc[0:100],ds['high'].iloc[0:100])
crossDetc(ds['openTime'].iloc[0:100],ds['highSMA25'].iloc[0:100],ds['high'].iloc[0:100])
crossDetc(ds['openTime'].iloc[0:100],ds['highSMA50'].iloc[0:100],ds['high'].iloc[0:100])
crossDetc(ds['openTime'].iloc[0:300],ds['highSMA100'].iloc[0:300],ds['high'].iloc[0:300])
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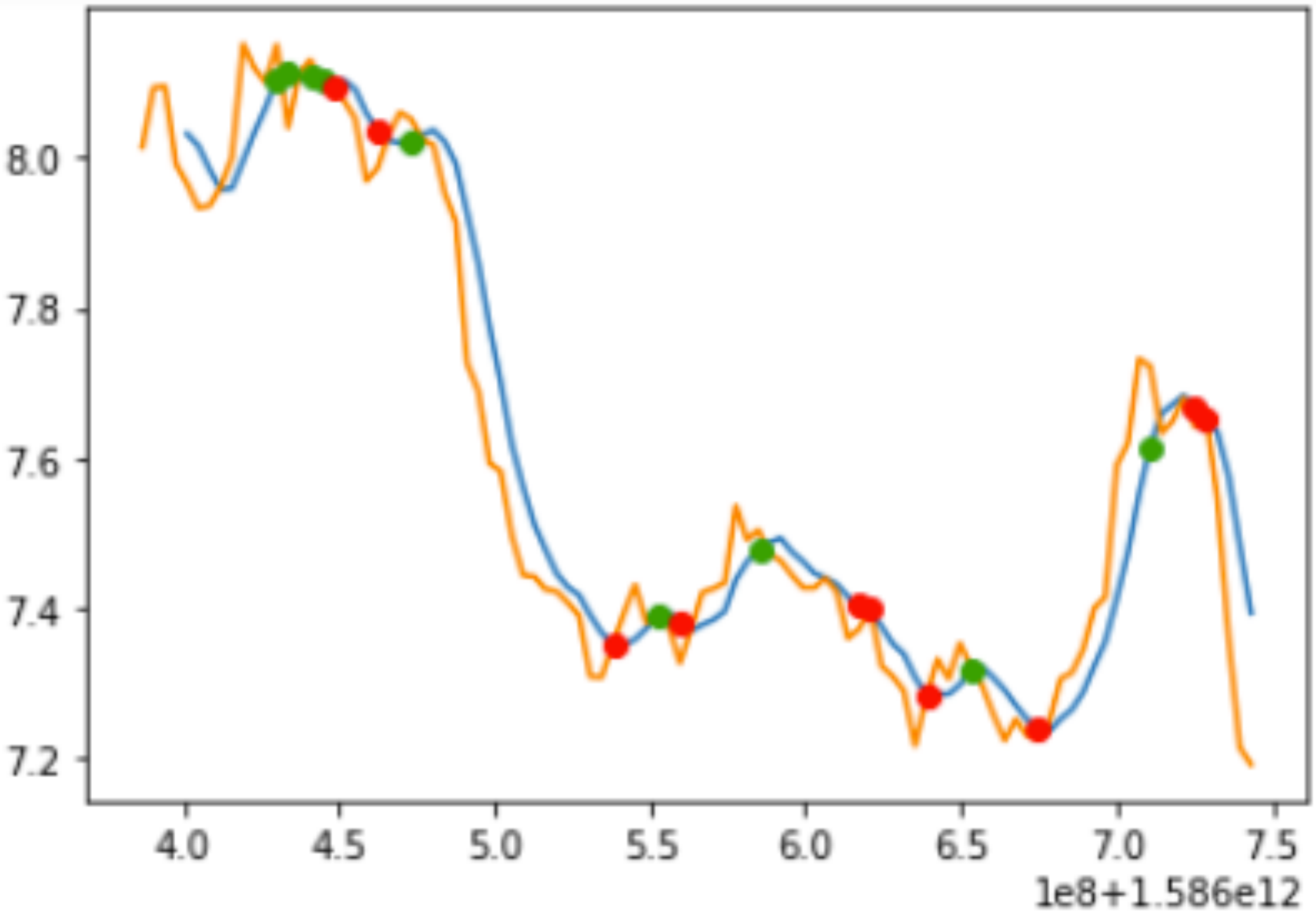
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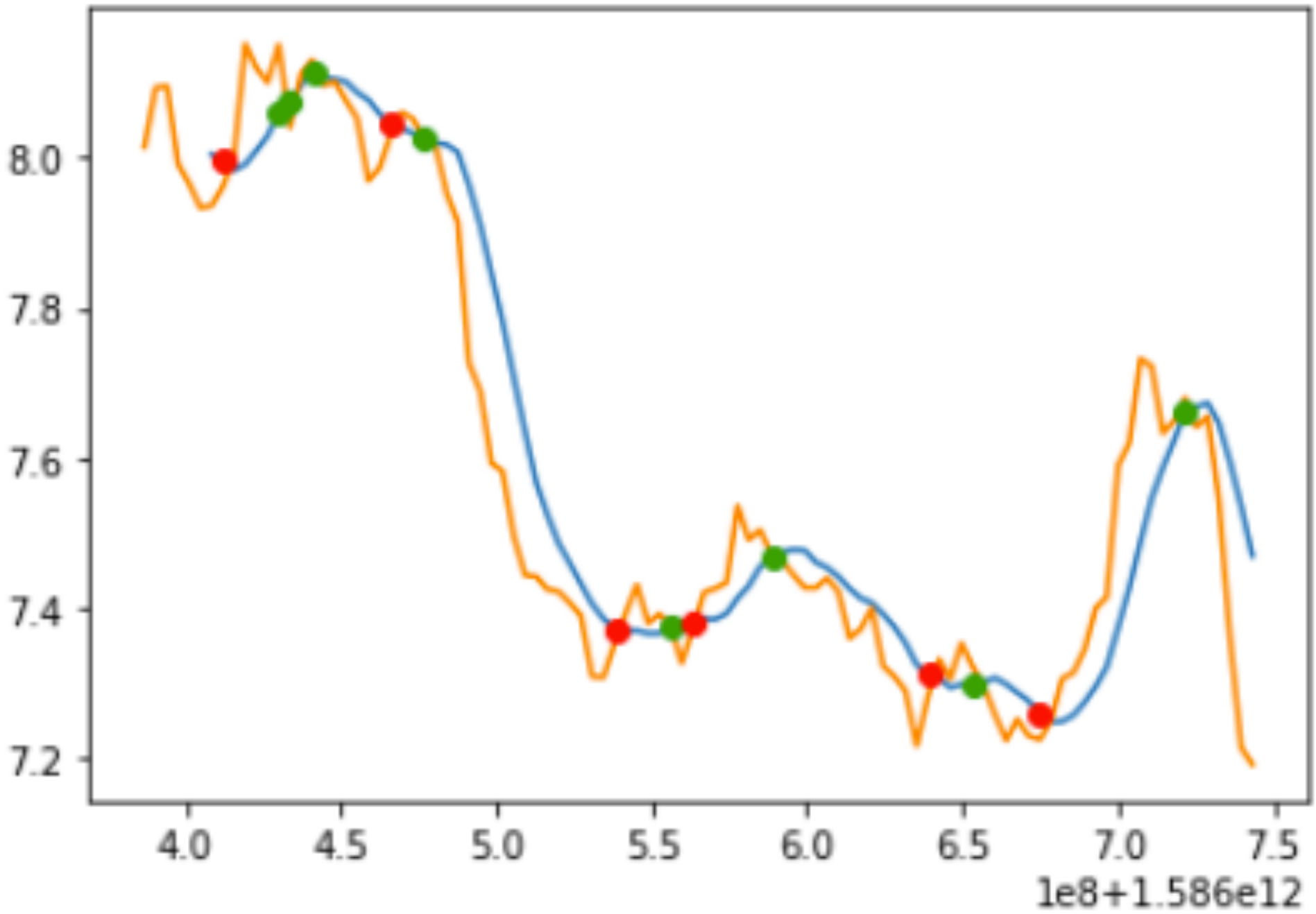
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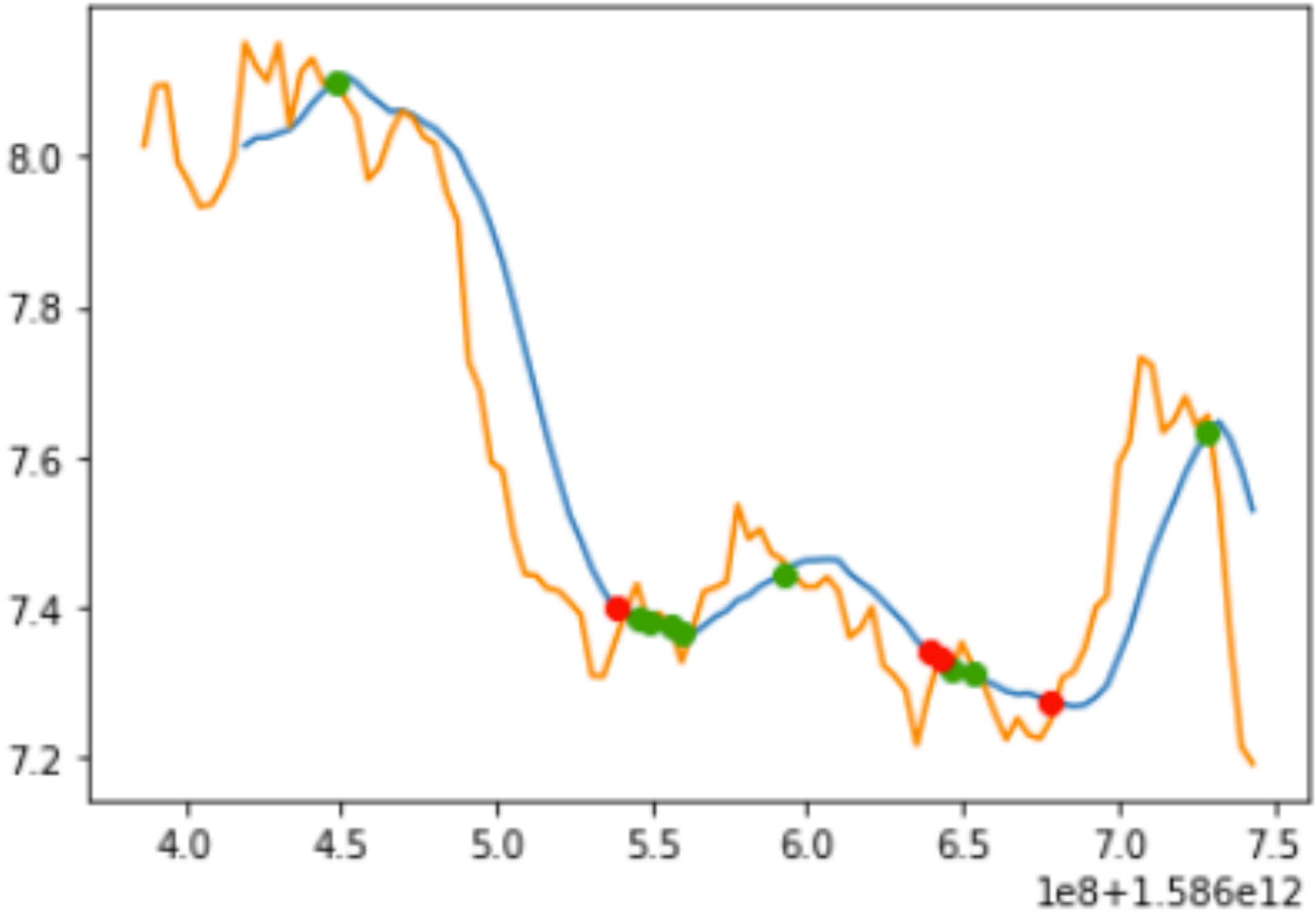
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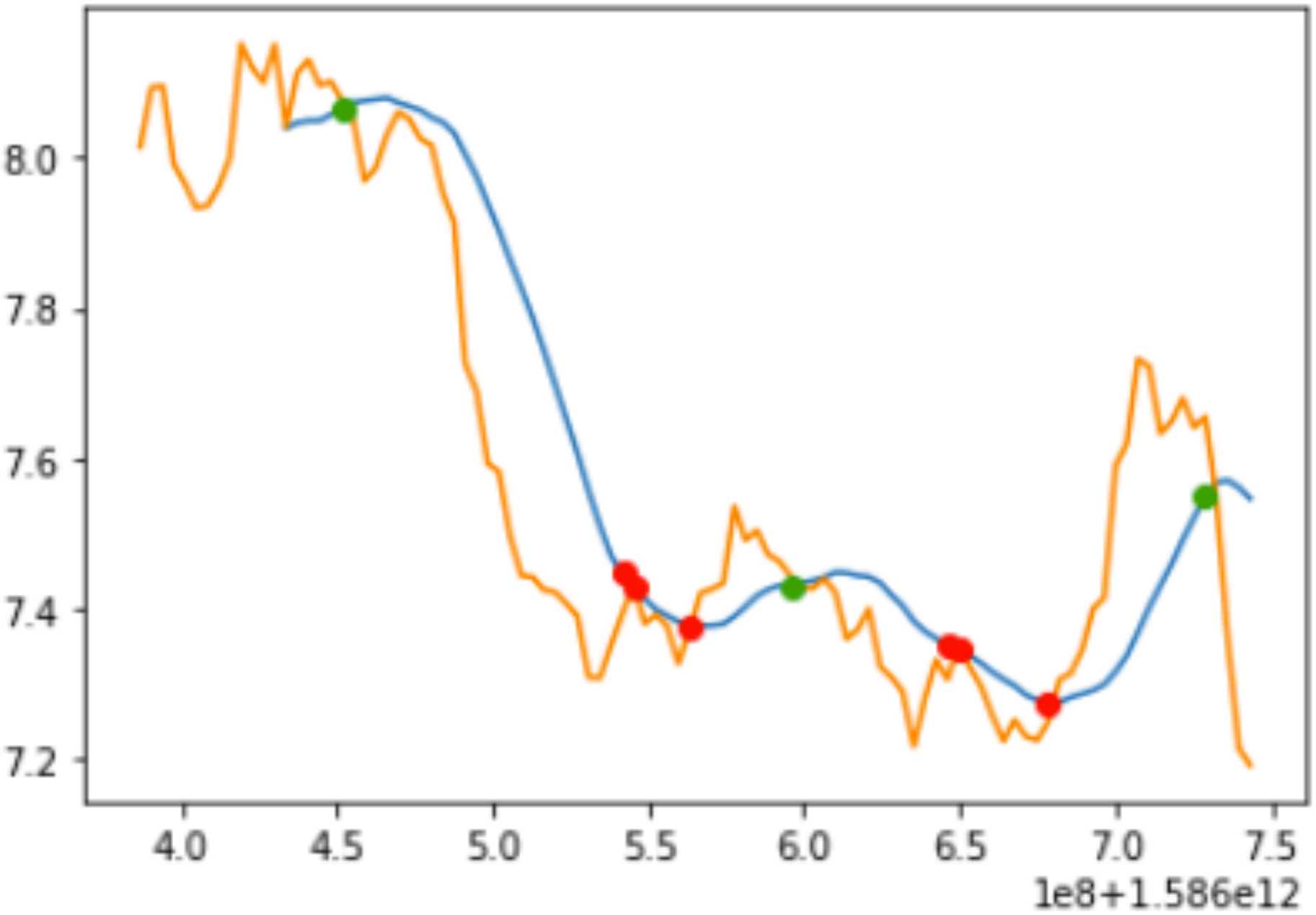
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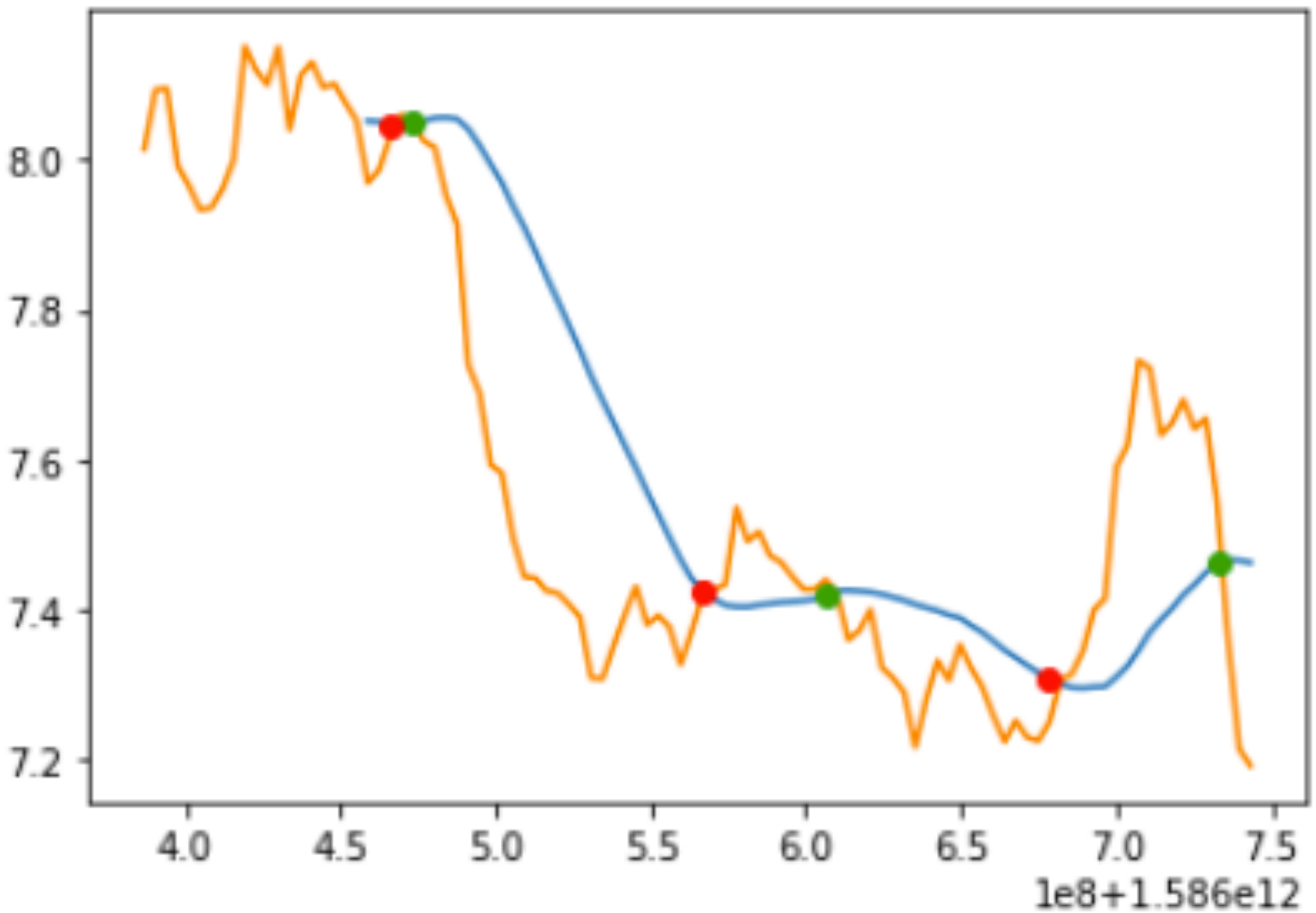
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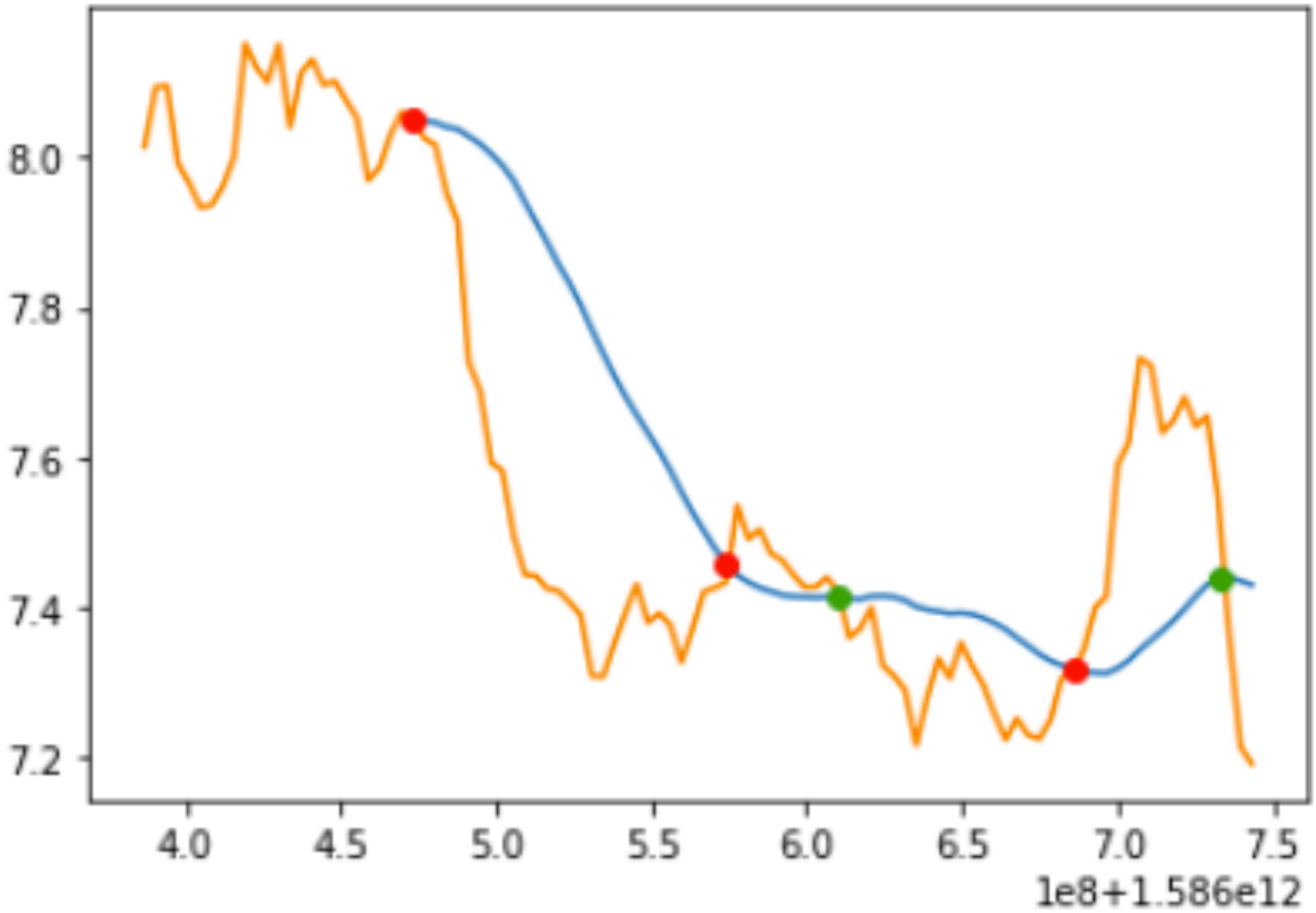
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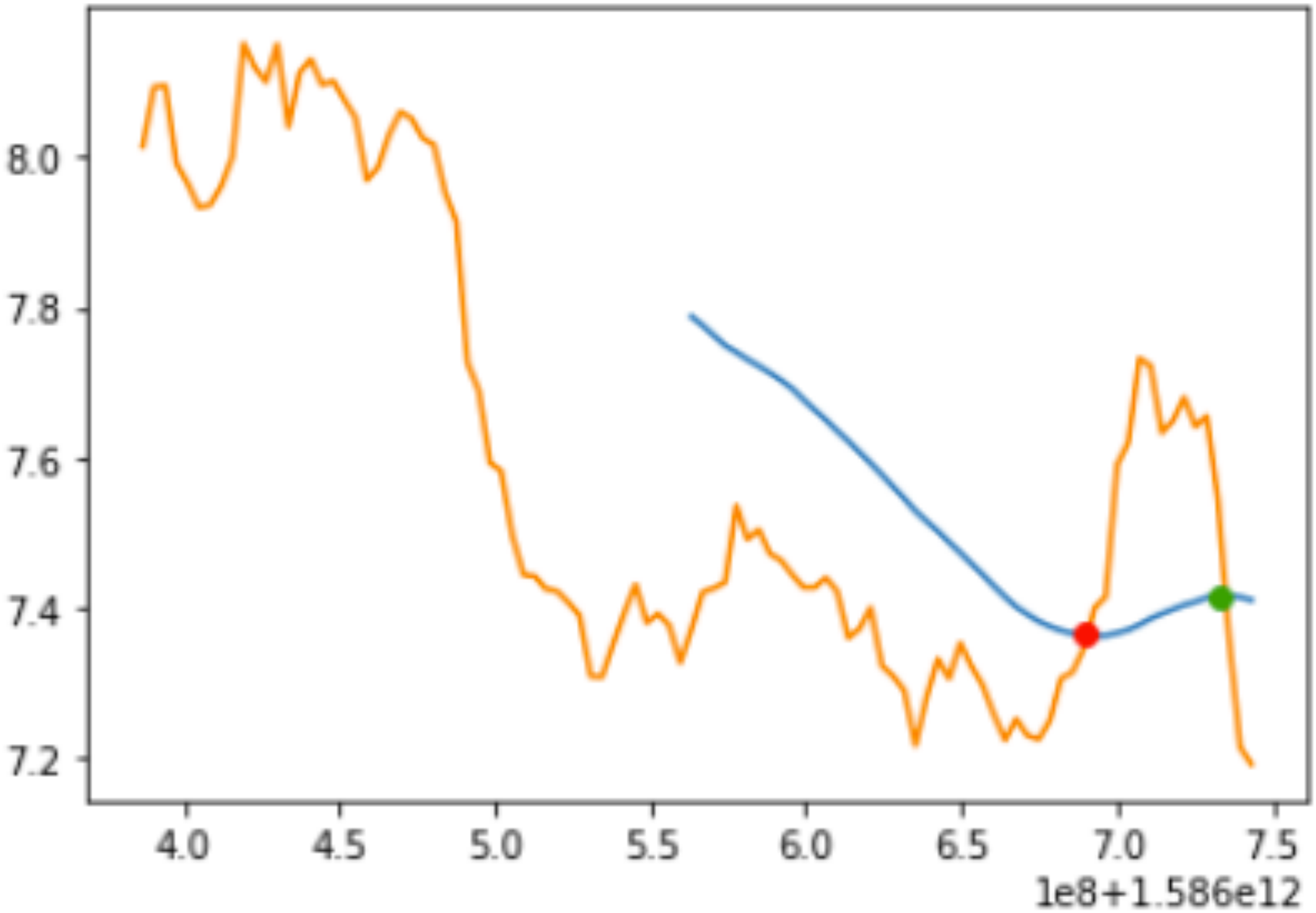
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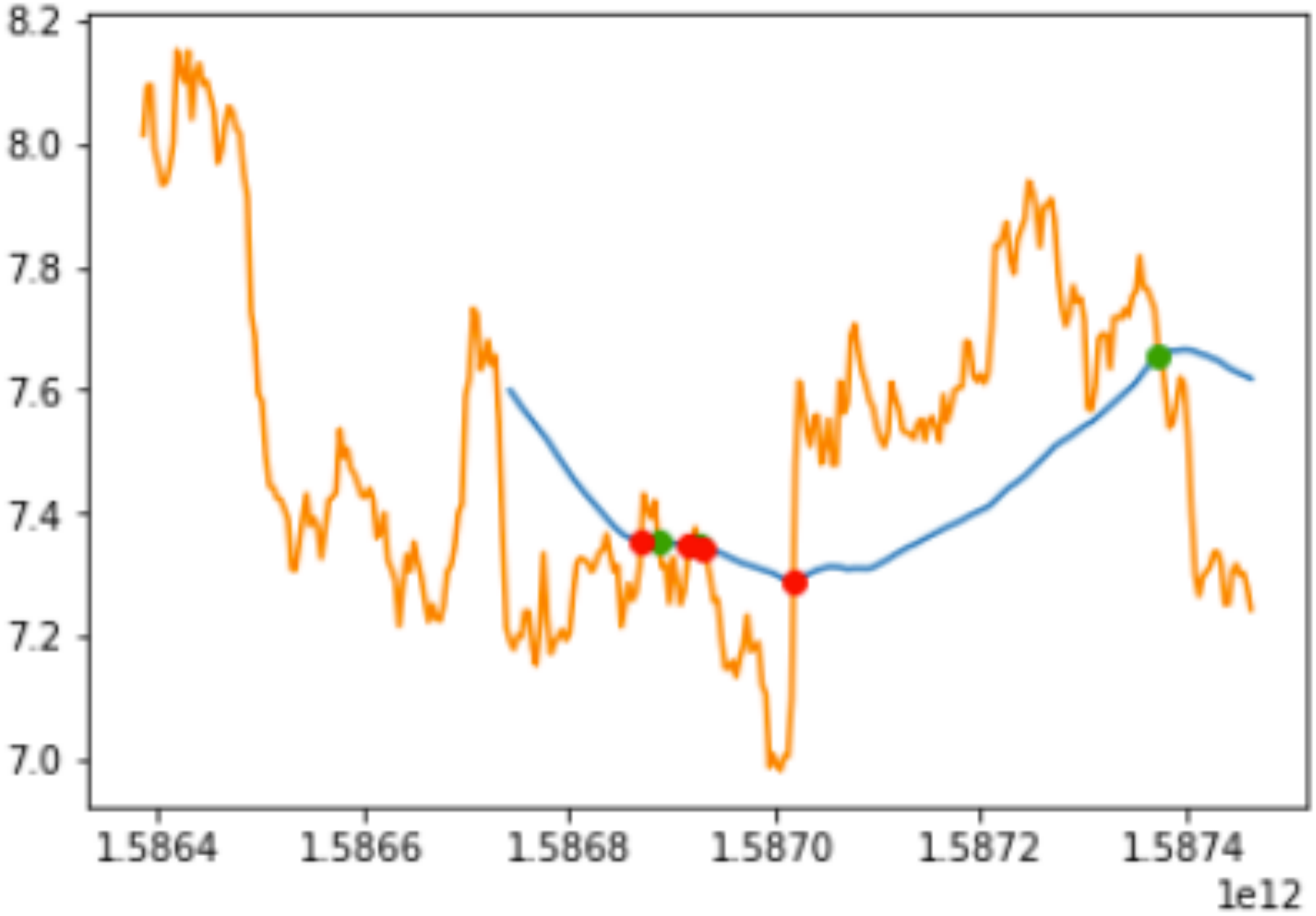
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```
crossDetc(ds['openTime'].iloc[0:100],ds['highSMA10'].iloc[0:100],ds['lowSMA5'].iloc[0:100])
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crossDetc(ds['openTime'].iloc[0:100],ds['highSMA50'].iloc[0:100],ds['lowSMA10'].iloc[0:100])
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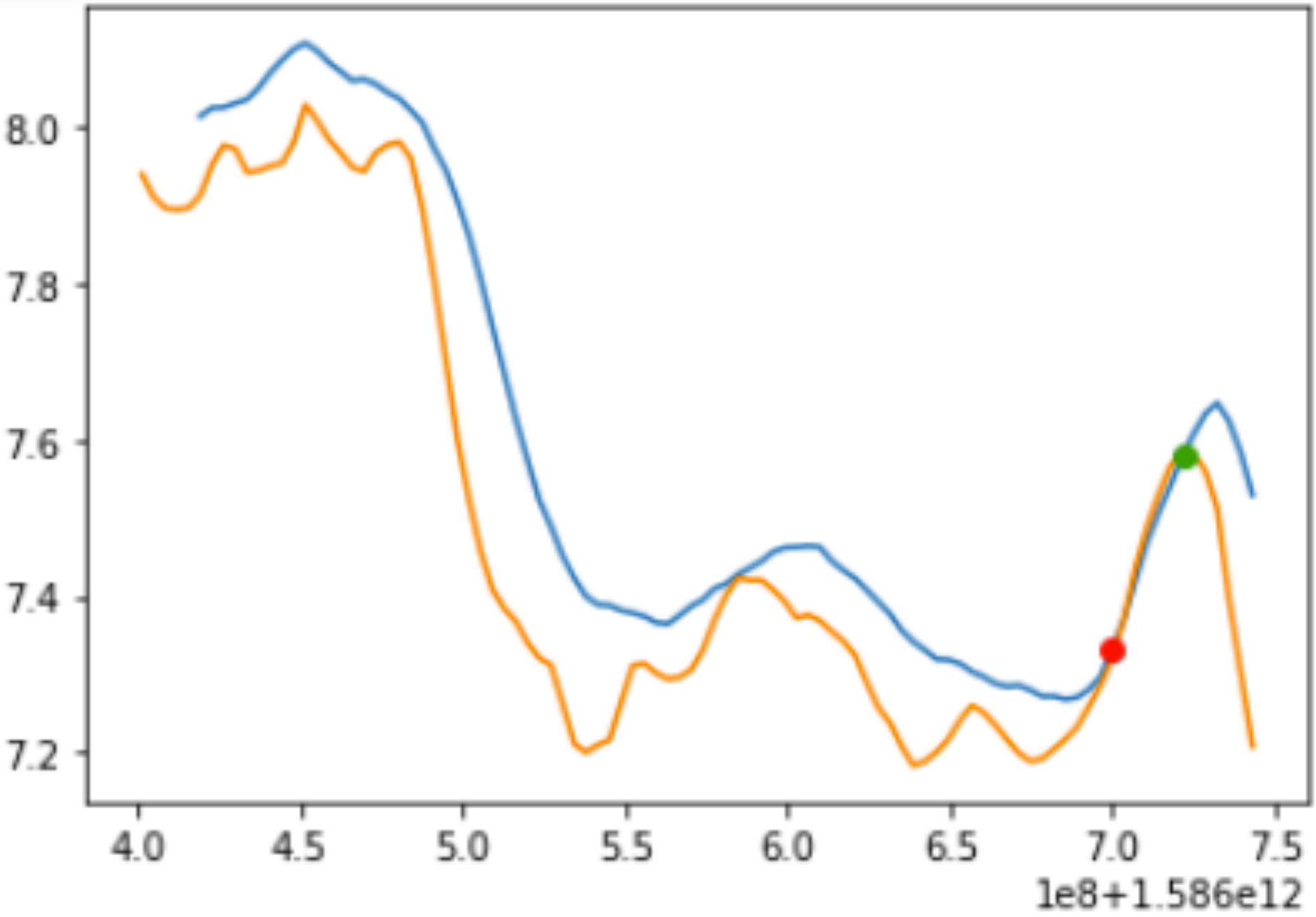
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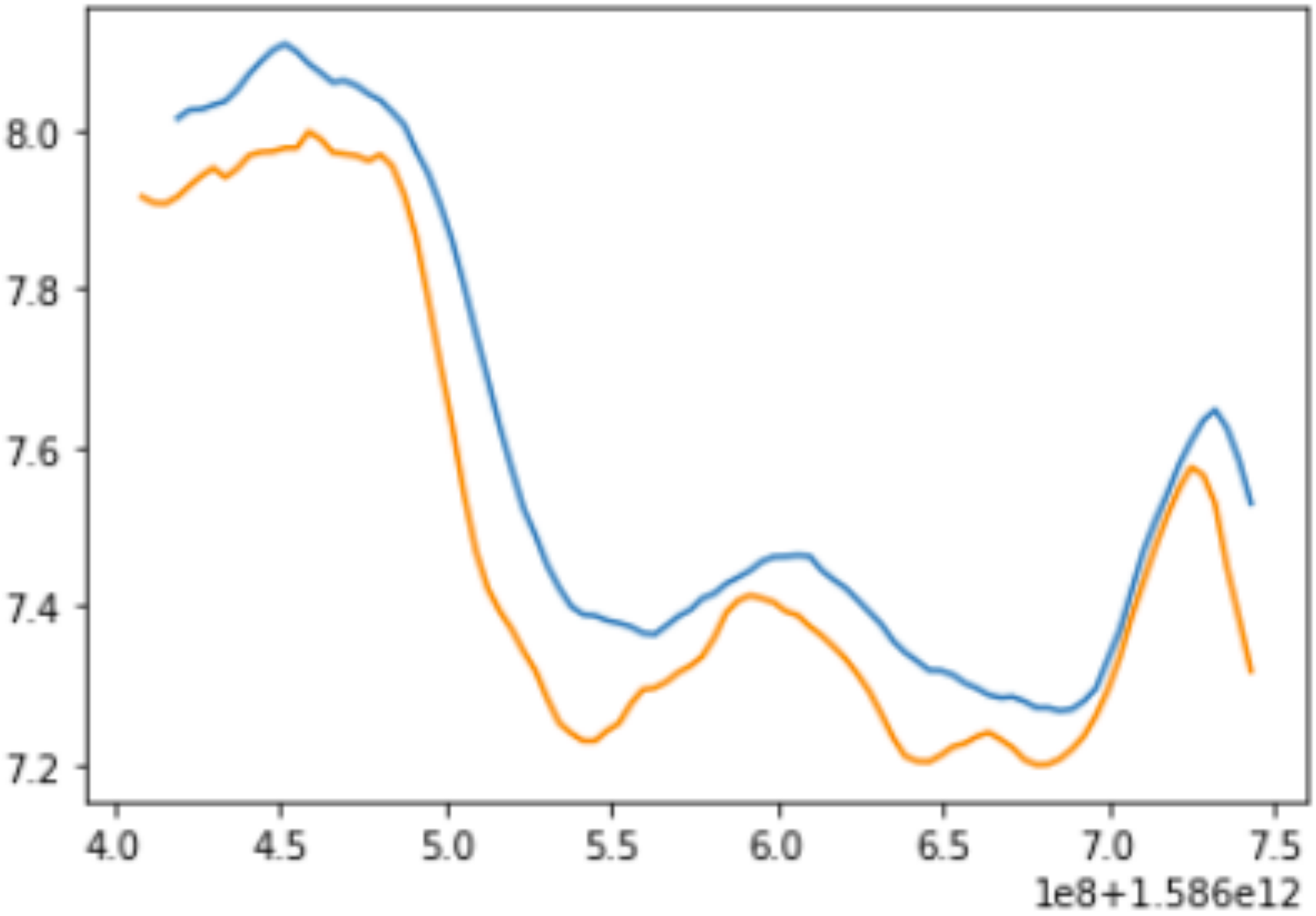
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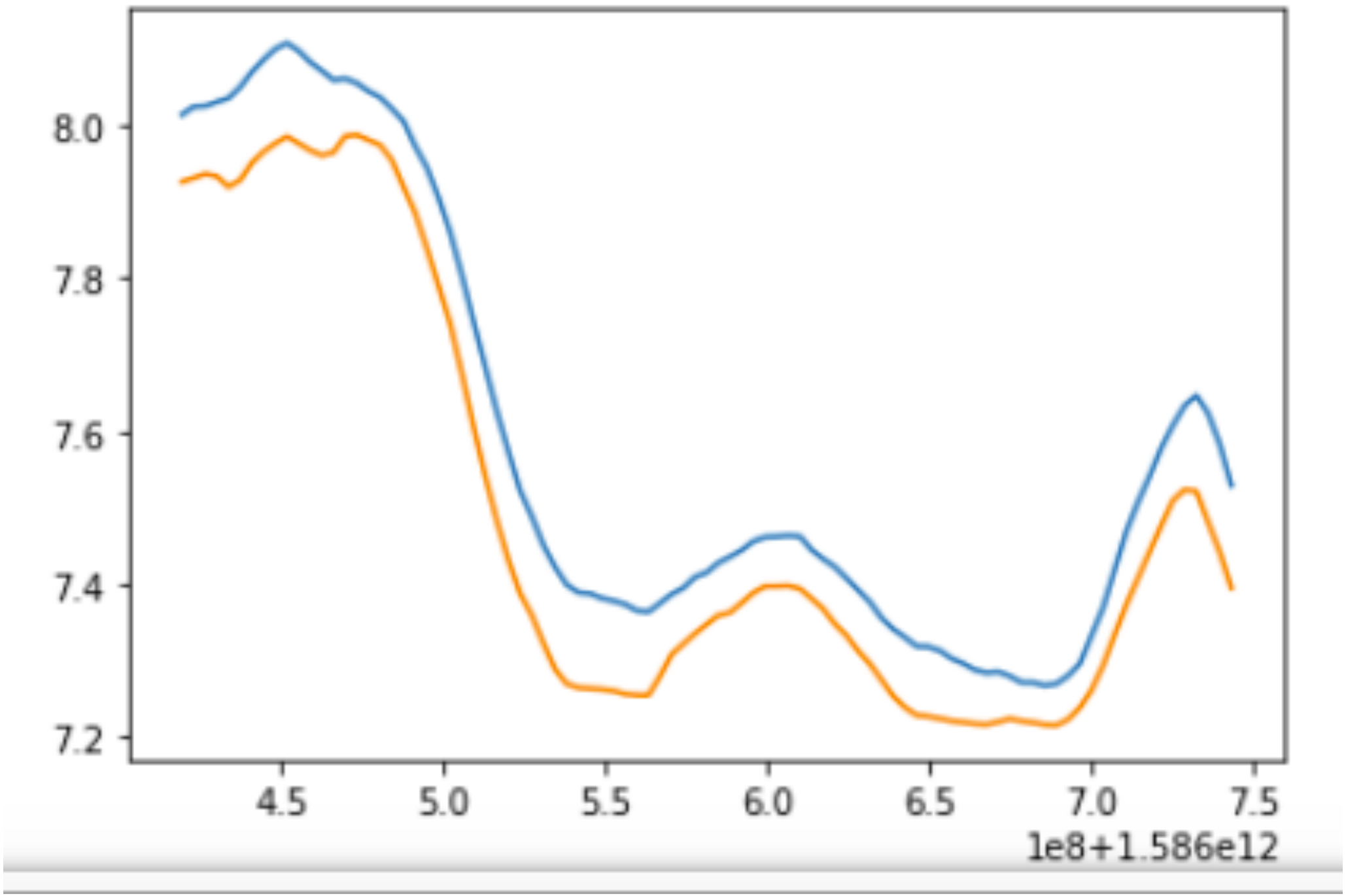
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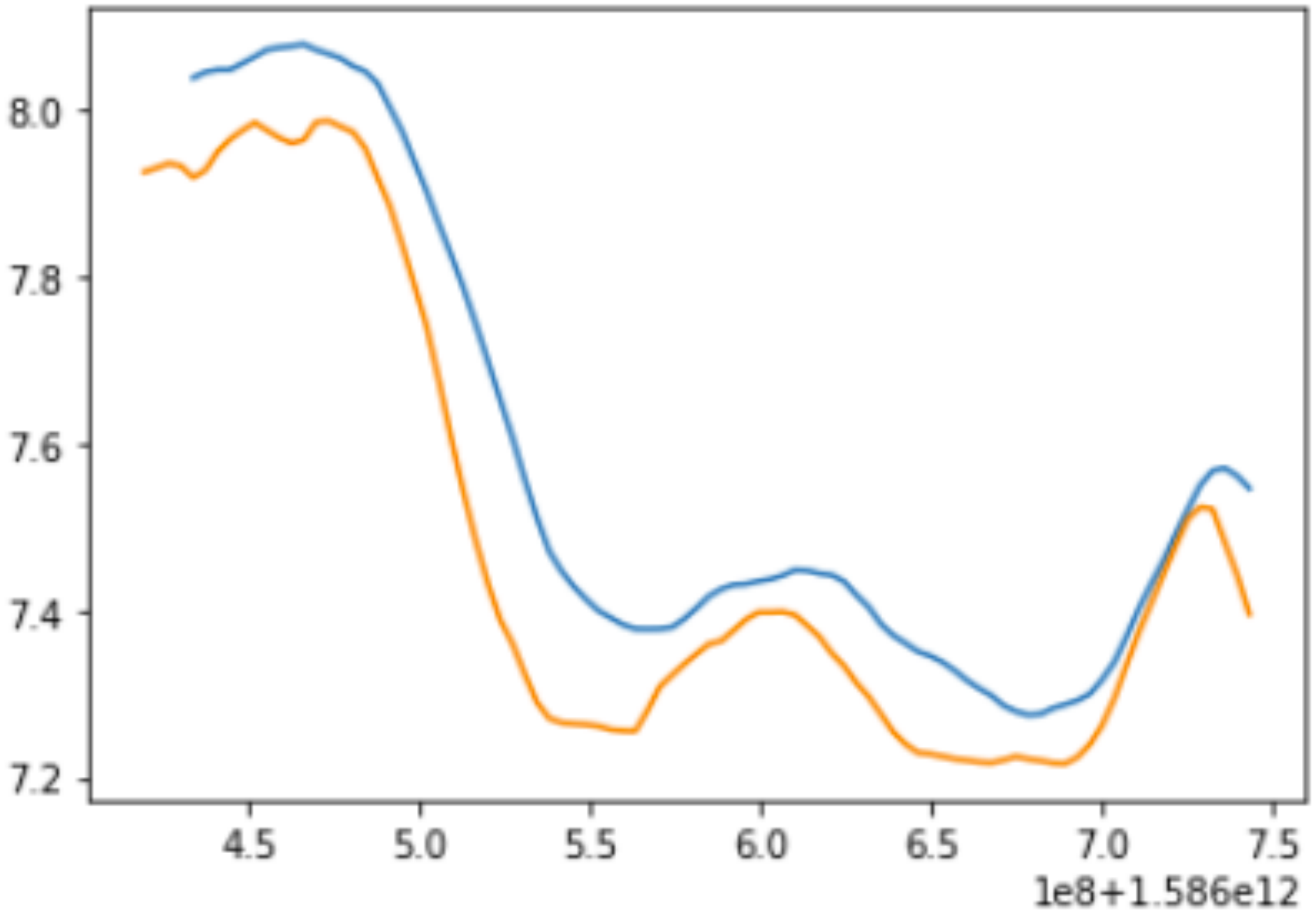
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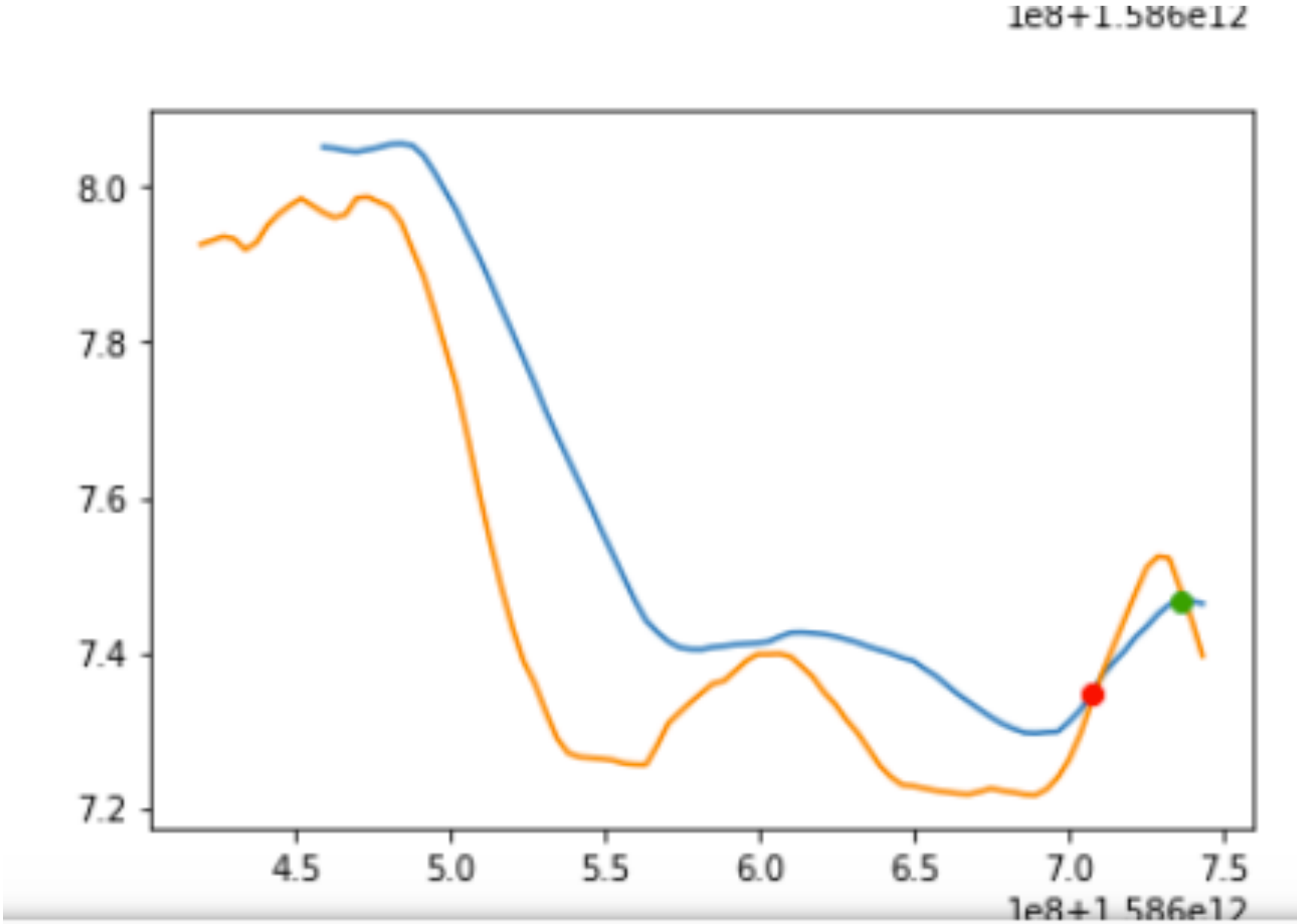
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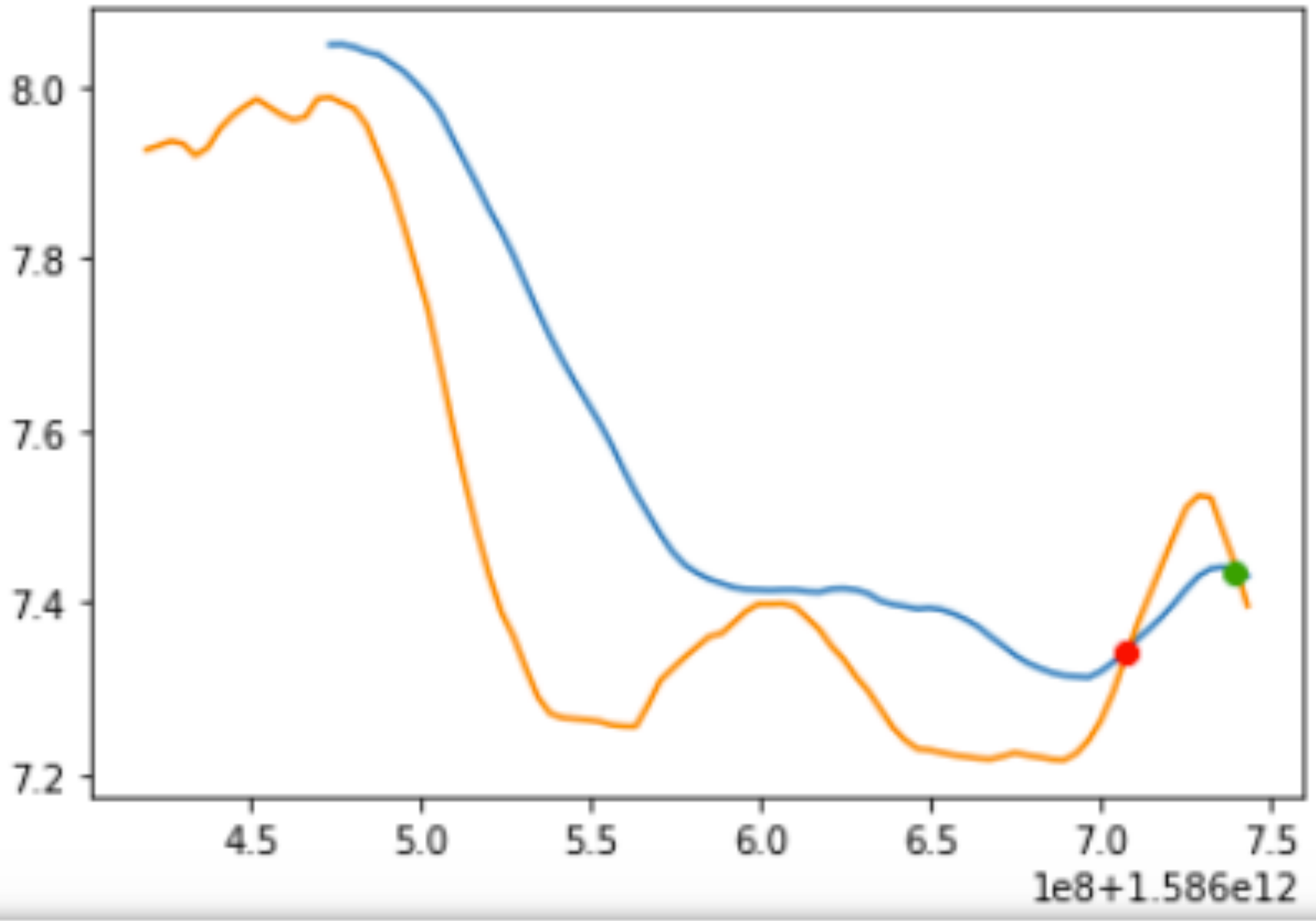
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7.8
7.6
7.4
7.2
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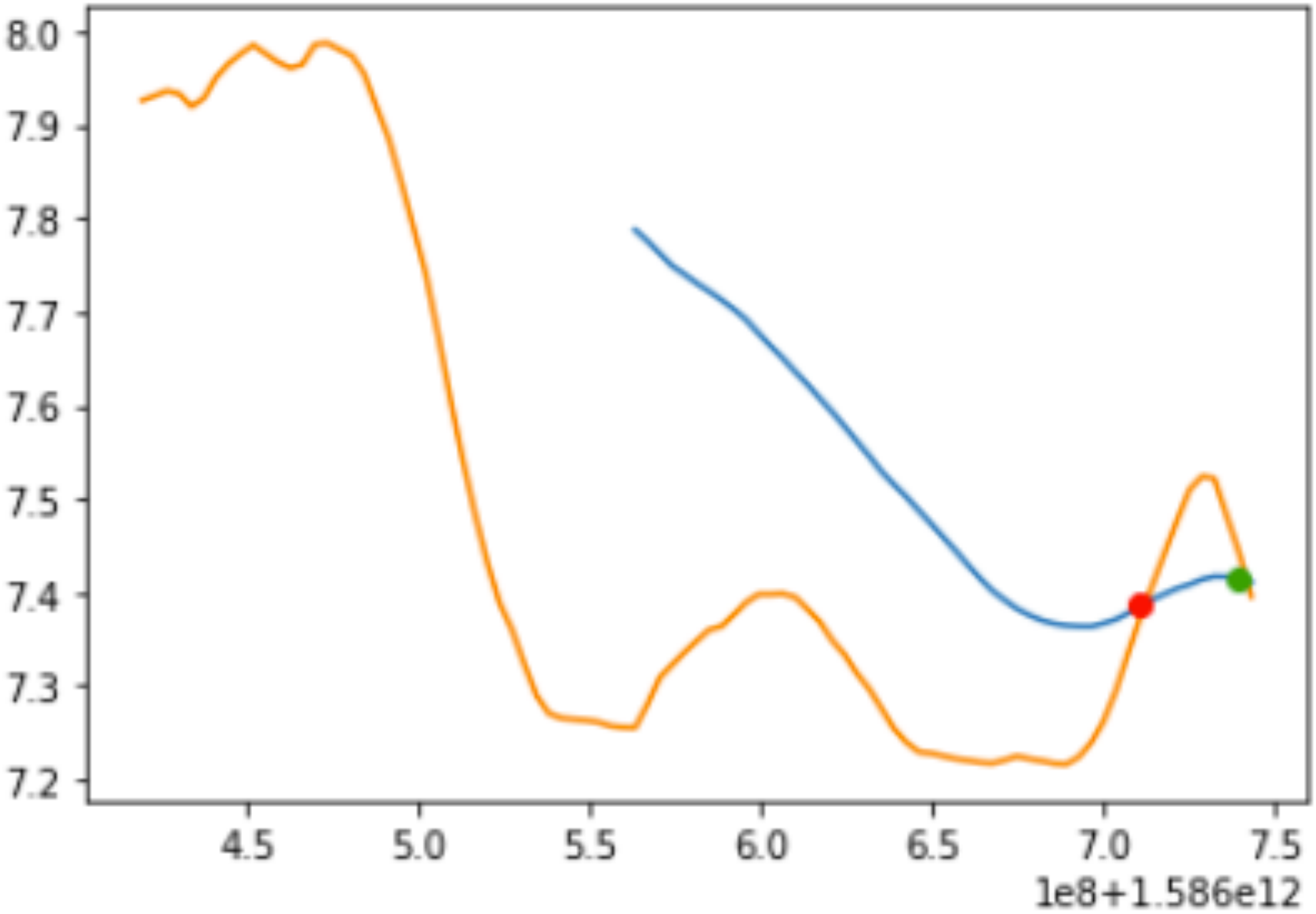
7.0
7.5
1e8+1.586e12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7.8
7.7
7.6
7.5
7.4
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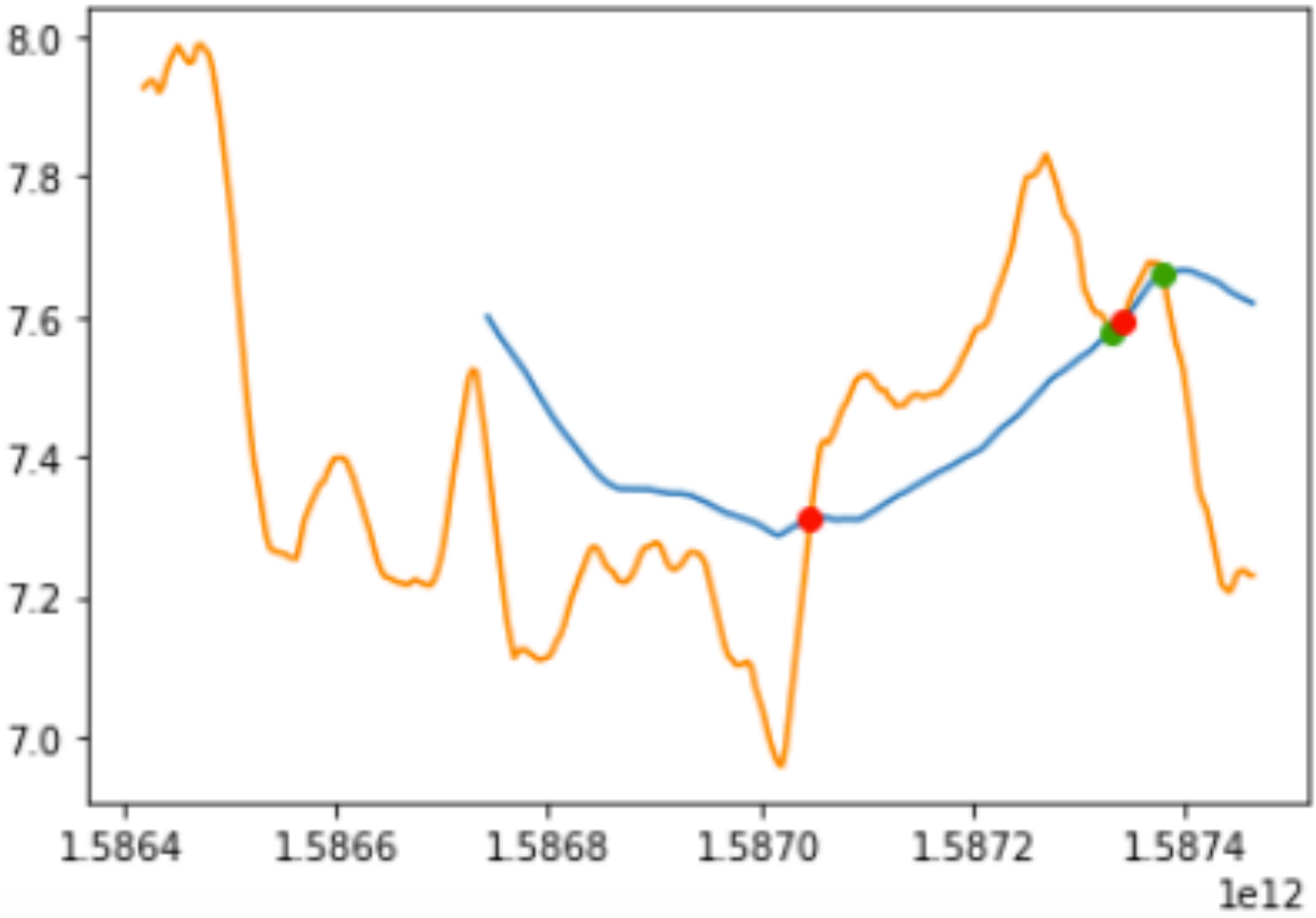
5.5
6.0
6.5
7.0
7.5
1e8+1.586e12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7.6
7.4
7.2
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1e12