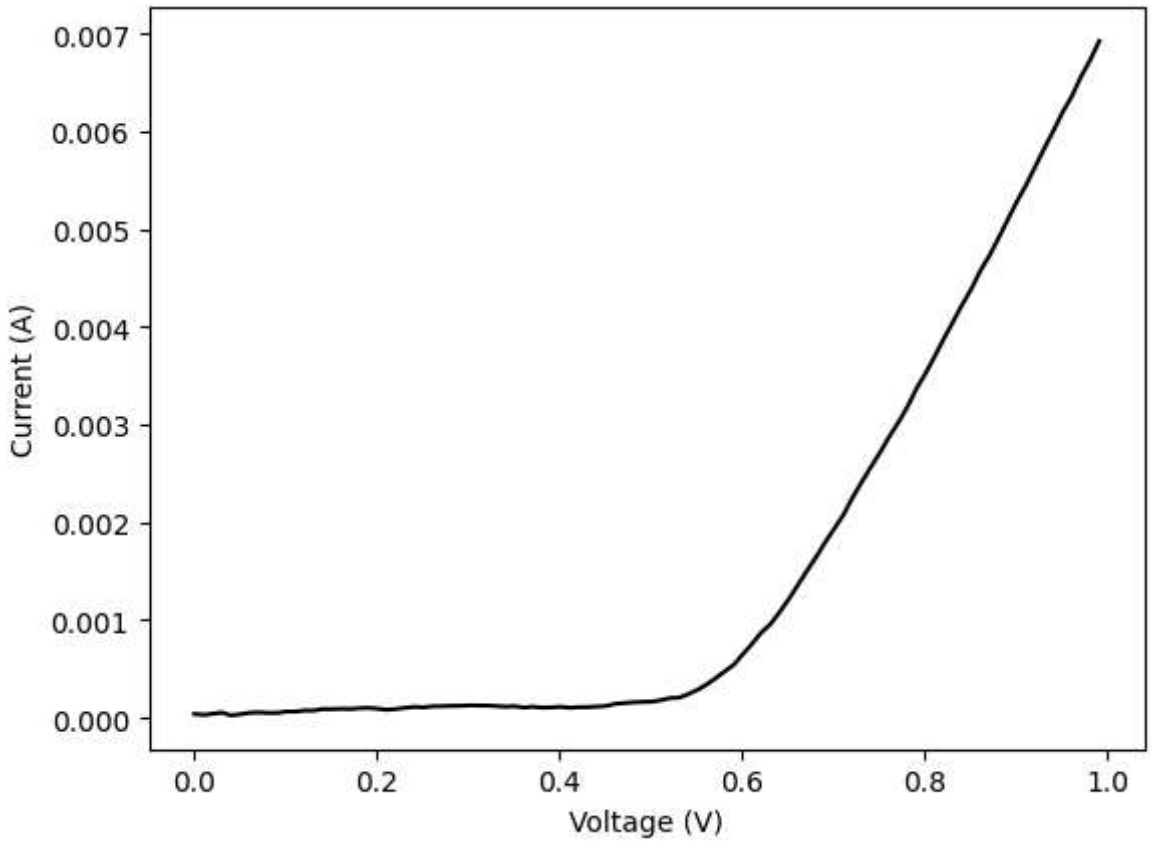
In [ ]:
```
import pandas as pd
import matplotlib.pyplot as plt
from scipy import stats
import pylatex
```

In [ ]:
```
dataset=pd.read_csv('data_IV.csv')
print(dataset)
```

```
    Voltage   Current
0   0.000000  0.000040
1   0.011884  0.000031
2   0.019978  0.000042
3   0.029856  0.000055
4   0.039833  0.000026
..       ...       ...
95  0.951042  0.006195
96  0.960875  0.006354
97  0.970883  0.006553
98  0.980979  0.006725
99  0.991082  0.006922

[100 rows x 2 columns]
```

In [ ]:
```
plt.clf()
plt.plot(dataset.iloc[:,0],dataset.iloc[:,1], color='#000000')
plt.xlabel("Voltage (V)")
plt.ylabel("Current (A)")
plt.show()
```



In [ ]:
```
left_limit_value=0.7
filtered_dataset = dataset[dataset.iloc[:,0] >= left_limit_value]
thined_ds=filtered_dataset.iloc[1::2]
```

```
active_ds=thined_ds

print(active_ds)

slope, intercept, r, p, std_err =stats.linregress(active_ds.iloc[:,0],active_ds.

def myfunc(x):
  return slope*x+intercept

mymodel = list(map(myfunc, active_ds.iloc[:,0]))
```

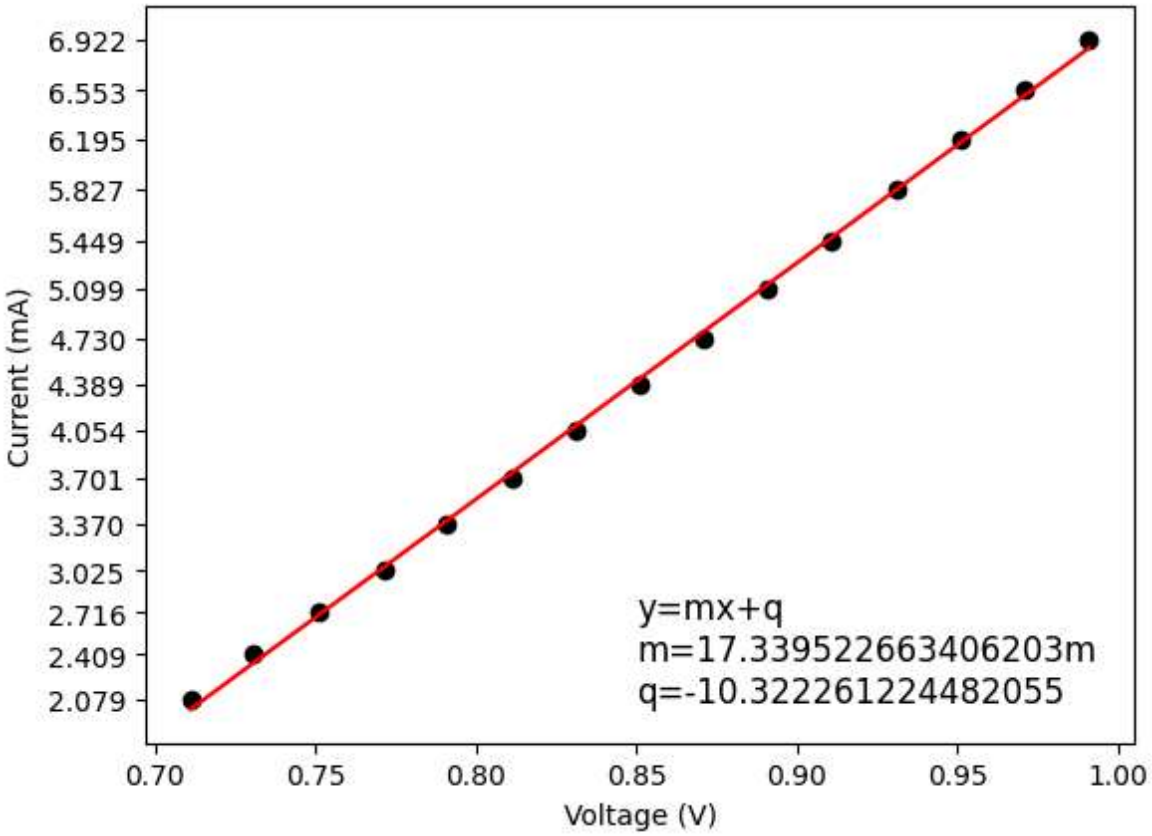
	Voltage	Current
71	0.711019	0.002079
73	0.730802	0.002409
75	0.751122	0.002716
77	0.771254	0.003025
79	0.791084	0.003370
81	0.811099	0.003701
83	0.831127	0.004054
85	0.851141	0.004389
87	0.870970	0.004730
89	0.891075	0.005099
91	0.910916	0.005449
93	0.931091	0.005827
95	0.951042	0.006195
97	0.970883	0.006553
99	0.991082	0.006922

In [ ]:
```
plt.scatter(active_ds.iloc[:,0],active_ds.iloc[:,1]*1000, color='k')
plt.plot(active_ds.iloc[:,0], mymodel, 'r')

plt.xlabel('Voltage (V)')
plt.ylabel('Current (mA)')
# Annotation
plt.text(
    0.85,
    0.002875*1000,
    f"y=mx+q\nm={slope}m\nq={intercept}",
    fontsize=12,
    color="black",
    verticalalignment="top",
)

plt.yticks(active_ds.iloc[:,1]*1000)

plt.show()
```


6.922
6.553
6.195
5.827
5.449
5.099
4.730
4.389
4.054
3.701
3.370
3.025
2.716
2.409
2.079
Current (mA)
0.70
0.75
0.80
0.85
0.90
0.95
1.00
Voltage (V)
y=mx+q
m=17.339522663406203m
q=-10.322261224482055